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# TIME and WORK

## LCM Method

This can be understood in terms of the above example in the following way:

Let us assume that total work to be equal to the LCM of the days taken by Amit and Vinit (i.e., of 10 and 15).

**Assume work = 60 units**

Work done by Amit in one day = 5 units

Work done by Vinit in one day = 4 units

Work done by both of them in one day when working together = 9 units

So, the number of days taken by both of them when working together =  $60/9 = 6\frac{2}{3}$  days

## Application of STD table (LCM Method)

Speed (S) or Efficiency	Time (T)	Distance (D) Total work (LCM)
LCM/T	LCM/S	LCM

### Example

A can finish a work in 24 days, B in 9 days and C in 12 days. B & C start the work but are forced to leave after 3 days. The remaining work done by A in ?

**Solution:**

LCM of 24,12,9 = 72 (total work)

Find speed column (follow red arrow)

Given →

B+C work for 3 days

(follow 2nd table)

So combined speed of B+C =  $8+6=14$

$D = 14 \times 3 = 42$

Remaining work =  $72 - 42 = 30$

A's speed = 3

Time taken by A to do remaining work =  $30/3 = 10$

	S	T	D (LCM)
A	?	24	72
B	?	9	72
C	?	12	72

	S	T	D (LCM)
B+C	$8+6$ $=14$	3	42
A	3	?	30

### Q1.

A can do a piece of work in  $6\frac{2}{3}$  days and B in 9 days. How many days will both take together to complete the work ?

- (a) 7.5 days
- (b) 5.4 days
- (c) 3.6 days

(d) 3 days

### Q2.

A can do a piece of work in 15 days and B in 20 days. If they together work on it for 4 days, then the fraction of the work that is left is :

- (a)  $8/15$
- (b)  $7/15$
- (c)  $1/4$
- (d)  $1/10$

### Q3.

A can cultivate  $2/5$  th of a land in 6 days and B can cultivate  $1/3$  th of the same land in 10 days. Working together A and B can cultivate  $4/5$  th of the land in;

- (a) 4 days
- (b) 5 days
- (c) 8 days
- (d) 10 days

### Q4.

A can finish a piece of work in 18 days and B can do the same work in half the time taken by A. Then working to their what part of the same work they can finish in a day?

- (a)  $1/6$
- (b)  $2/5$
- (c)  $1/9$
- (d)  $2/7$

### Q5.

A, B and C can complete a piece of work in 24, 6 and 12 days respectively. Working together, they will complete the same work in:

- (a)  $1/4$  day
- (b)  $7/24$  day
- (c)  $24/7$  days
- (d) 4 days

### Q6.

A and B can do a piece of work in 12 days. B and C in 15 days and C and A in 20 days. If A, B and C work together, they will complete the work in :

- (a) 5 days
- (b)  $47/6$
- (c) 10 days
- (d)  $47/5$  days

### Q7.

A and B can do a piece of work in 72 days. B and C can do it in 120 days. A and C and do it in 90 days. If In how many days all three together can do the work?

- (a) 80 days
- (b) 100 days
- (c) 60 days
- (d) 150 days

### Q8.

A man, a woman and a boy can complete a job in 3, 4 and 12 days. How many boys must assist 1 man and 1 woman to complete the job in  $1/4$  of a day ?

- (a) 1

- (b) 4  
(c) 19  
(d) 41

**Q9.**

A and B can do a piece of work in 10 days, B and C in 15 days and C and A in 20 days, C alone can do the work in :

- (a) 60 day  
(b) 120 days  
(c) 80 days  
(d) 30 days

**Q10.**

A can do a piece of work in 4 hours; B and C can do it in 3 hours. A and C can do it in 2 hours. How long will B alone take to do it?

- (a) 10 hours  
(b) 12 hours  
(c) 8 hours  
(d) 24 hours

**Q11.**

A can complete a piece of work in 6 days while B can complete the same work in 12 days. If they work together and complete it, the portion of the work done by A is A:

- (a)  $1/3$   
(b)  $2/3$   
(c)  $1/4$   
(d)  $1/2$

**Q12.**

A and B together can do a piece of work in 10 days. A alone can do it in 30 days. The time in which B alone can do it is :

- (a) 10 days  
(b) 12 days  
(c) 15 days  
(d) 20 days

**Q13.**

A and B can complete a piece of work in 15 days and 10 days respectively. They contracted to complete the work for Rs. 30,000. The share of A in the contracted money will be :

- (a) Rs. 18,000  
(b) Rs. 16,500  
(c) Rs. 12,500  
(d) Rs. 12,000

**Q14.**

A can do  $1/2$  of a piece of work in 5 days, B can do  $3/5$  of the same work in 9 days, C can do  $2/3$  of that work in 8 days. In how many days can three of them together do the work?

- (a) 3 days  
(b) 5 days  
(c)  $9/2$  days  
(d) 4 days

**Q15.**

A man and a boy received Rs. 800 as wages for 5 days for the work they did together. The man's efficiency is twice of the boy. What are the daily wages of the boy?

- (a) Rs.  $160/3$   
(b) Rs.  $169/3$   
(c) Rs.  $133/3$   
(d) Rs.  $121/3$

**Q16.**

A daily-wages labourer was engaged for a certain number of days for Rs. 5,750; but being absent on some of those days he was paid Rs. 5,000. What were his maximum possible daily wages?

- (a) Rs. 125  
(b) Rs. 250  
(c) Rs. 375  
(d) Rs. 500

**Q17.**

A and B can do a piece of work in 12 days, B and C in 8 days and C and A in 6 days. How long would B take to do the same work alone ?

- (a) 24 days  
(b) 32 days  
(c) 40 days  
(d) 48 days

**Q18.**

A does  $4/5$  of a piece of work in 20 days; He then calls in B and they finish the remaining work in 3 days. How long B alone will take to do whole work ?

- (a)  $75/2$  days  
(b) 37 days  
(c) 40 days  
(d) 23 days

**Q19.**

A does  $7/10$  part of work in 15 days. After that he completes the remaining work in 4 days with the help of B. In how many days will A and B together do the same work ?

- (a) 30 days  
(b) 24 days  
(c) 18 days  
(d) 36 days

**Q20.**

A and B can do a piece of work in 30 days while B and C can do same work in 24 days and C and A in 20 days. They all work together for 10 days. How long will a take to finish the remaining work ?

- (a) 30 days  
(b) 24 days  
(c) 18 days  
(d) 36 days

**Q21.**

A and B undertook to a piece of work for Rs. 4500. A alone could do it in 8 days and B alone in 12 days. With the assistance of C they finished the work in 4 days. Then C's share in the total money is :

- (a) Rs. 2250
- (b) Rs. 1500
- (c) Rs. 750
- (d) Rs. 375

**Q22.**

A alone can complete a piece of work in 12 days. A and B together can complete it in 8 days. How long will B alone take to complete the work?

- (a) 24 days
- (b) 18 days
- (c) 16 days
- (d) 20 days

**Q23.**

A and B together can do a piece of work in 5 days and A alone can do it in 8 days. B alone can do the same piece of work in :

- (a)  $34/3$  days
- (b)  $63/5$  days
- (c)  $40/3$  days
- (d)  $84/5$  days

**Q24.**

If A and B together can complete a piece of work in 15 days and B alone in 20 days, in how many days can A alone complete the work?

- (a) 60 days
- (b) 45 days
- (c) 40 days
- (d) 30 days

**Q25.**

A can complete  $1/3$  of a work in 5 days and B,  $2/5$  of the work in 10 days, In how many days both A and B together can complete the work ?

- (a) 10 days
- (b)  $75/8$  days
- (c)  $44/5$  days
- (d)  $29/4$  days

**Q26.**

A alone can do a piece of work in 6 days and B alone is 8 days, A and B undertook to do it for Rs. 3200. With the help of C they completed the work in 3 days . How much is to be paid to C -

- (a) Rs. 375
- (b) Rs. 400
- (c) Rs. 600
- (d) Rs. 800

**Q27.**

A man can do a piece of work in 5 days, but with the help of his son, he can do it in 3 days. In what time can the son do it alone ?

- (a) 7 days
- (b) 8 days
- (c)  $15/2$  days
- (d)  $13/2$  days

**Q28.**

A and B together can do a piece of work in 8 days, B and C together in 10 days, while C and A together in 6 days, if they all work together the work will be completed in :

- (a)  $15/4$  days
- (b)  $24/7$  days
- (c)  $240/47$  days
- (d)  $40/9$  days

**Q29.**

A and B together can complete a piece of work in 8 days, B alone can complete that work in 12 days. B alone worked for four days. After that how long will A alone take to complete the work ?

- (a) 15 days
- (b) 18 days
- (c) 16 days
- (d) 20 days

**Q30.**

A and B together can complete a piece of work in 8 days and B and C together in 12 days. All of the three together can complete the work in 6 days. A and C together complete the work in?

- (a) 8 days
- (b) 10 days
- (c) 12 days
- (d) 20 days

**Q31.**

If A and B together can complete a piece of work in 18 days, A and C together in 12 days and B and C together in 9 days, then B alone can do the work in:

- (a) 18 days
- (b) 24 days
- (c) 30 days
- (d) 40 days

**Q32.**

A can complete  $2/3$  of a work in 8 days and B can complete  $3/5$  of the work in 6 days. In how many days can both A and B together complete the work?

- (a) 3 days
- (b)  $60/11$  days
- (c)  $15/4$  days
- (d)  $23/8$  days

**Q33.**

P can complete  $1/4$  of a work in 10 days, Q can complete 40 % of the same work in 145 days. R, completes  $1/3$  of the work in 13 days and S,  $1/6$  of the work in 7 days. Who will able to complete the work first?

- (a) P
- (b) Q
- (c) R
- (d) S

**Q34.**

A, B and C individually can do a piece of work in 10 days, 12 days and 15 days respectively, If they start working together, then the number of days required to finish the work is:

- (a) 16 days
- (b) 8 days
- (c) 4 days
- (d) 2 days

**Q35.**

A and B together can do a piece of work in 12 days. While B alone can finish it in 30 days. A alone can finish the work in:

- (a) 20 days
- (b) 25 days
- (c) 15 days
- (d) 18 days

**Q36.**

A, B and C can complete a piece of work in 12, 24 and 36 days respectively. They will together complete the same work?

- (a) 61/11 days
- (b) 4 days
- (c) 72/11 days
- (d) 6 days

**Q37.**

Two men undertook to do a job for Rs. 1400. One of them can do it alone in 7 days and the other in 8 days. With the assistance of a boy they together completed the work in 3 days. How much money will the boy get?

- (a) Rs. 300
- (b) Rs. 325
- (c) Rs. 275
- (d) Rs. 250

**Q38.**

While working 7 hours a day, A alone can complete a piece of work in 6 days and B alone in 8 days. In what time would they complete it together working 8 hours a day?

- (a) 3 days
- (b) 4 days
- (c) 2.5 days
- (d) 3.6 days

**Q39.**

Working 5 hours a day, A can complete a piece of work in 8 days and working 6 hours a day, B can complete the same work in 10 days. Working 8 hours, a day, they both can complete the work in:

- (a) 3 days
- (b) 4 days
- (c) 4.5 days
- (d) 5.4 days

**Q40.**

A and B can do a piece of work in 10 days, B and C can do it in 12 days. C and A in 15 days. In how many days will C finish it alone?

- (a) 24 days
- (b) 30 days
- (c) 40 days
- (d) 60 days

**Q41.**

A man, a woman and a boy can complete a piece of work in 20 days, 30 days and 60 days respectively. How many boys must assist 2 men and 8 women so as to complete the work in 2 days?

- (a) 8
- (b) 12
- (c) 4
- (d) 6

**Q42.**

If A and B together can complete a piece of work in 12 days, B and C together in 15 days and C and A together in 20 days, then B alone can complete the work in:

- (a) 30 days
- (b) 25 days
- (c) 24 days
- (d) 20 days

**Q43.**

One man and one woman together can complete a piece of work in 8 days. A man alone can complete the work in 10 days. In how many days can one woman alone complete the work?

- (a) 140/9 days
- (b) 30 days
- (c) 40 days
- (d) 42 days

**Q44.**

A and B can separately do a piece of work in 6 days and 12 days respectively. How long will they together take to do the work?

- (a) 9 days
- (b) 18 days
- (c) 6 days
- (d) 4 days

**Q45.**

A can do  $\frac{1}{6}$  of a work in 5 days and B can do  $\frac{2}{5}$  of the work in 8 days. In how many days, can both A and B together do the work?

- (a) 12 days
- (b) 15 days
- (c) 13 days
- (d) 20 days

**Q46.**

A can do a piece of work in 20 days and B in 40 days. If they work on it together for 5 days, then the fraction of the work that is left is:

- (a)  $\frac{5}{8}$
- (b)  $\frac{8}{15}$
- (c)  $\frac{7}{15}$
- (d)  $\frac{1}{10}$

**Q47.**

A can do a piece of work in 20 days and B can do the same piece of work in 30 days. Find in how many days both can do the work?

- (a) 16 days

- (b) 14 days  
 (c) 10 days  
 (d) 12 days

**Q48.**

A and B together can dig a trench in 12 days, which A alone can dig in 28 days : B alone can dig it in :

- (a) 20 days  
 (b) 21 days  
 (c) 22 days  
 (d) 23 days

**Q49.**

A sum of money is sufficient to pay A's wages for 21 days and B's wages for 28 days. The same money is sufficient to pay the wages of both for:

- (a)  $49/4$  days  
 (b) 14 days  
 (c)  $49/2$  days  
 (d) 12 days

**Q50.**

A, B and C together earn Rs. 150 per day while A and C together earn Rs. 94 and B and C together earn Rs. 76. The daily earning of 'C' is :

- (a) Rs. 56  
 (b) Rs. 20  
 (c) Rs. 34  
 (d) Rs. 75

**Q51.**

A work can be completed by P and Q in 12 days. Q and R in 15 days, R and P in 20 days. In how many days P alone can finish the work ?

- (a) 10 days  
 (b) 20 days  
 (c) 30 days  
 (d) 60 days

**Q52.**

A and B can complete a piece of work in 8 days, B and C can do it in 12 days, C and A can do it in 8 days, A, B and C together can complete it in :

- (a) 4 days  
 (b) 5 days  
 (c) 6 days  
 (d) 7 days

**Q53.**

A and B together can do a piece of work in 10 days, B and C together can do the same work in 6 days, A and C together can do the work in 12 days. Then A, B and C together can do the work in :

- (a) 28 days  
 (b) 14 days  
 (c)  $40/7$  days  
 (d)  $58/7$  days

**Q54.**

A and B working together; can do a piece of work in  $9/2$  hours. B and C working together can do it in 3 hours. C and A working together can do it in  $9/4$  hours. All of

them begin the work at the same time. Find how much time they will take to finish the piece of work.

- (a) 3 hours  
 (b) 2 hours  
 (c) 2.5 hours  
 (d) 3.25 hours

**Q55.**

A and B can do a piece of work in 8 days, B and C can do it in 24 days, while C and A can do it in  $60/7$  days, in how many days can C do it alone?

- (a) 60 days  
 (b) 40 days  
 (c) 30 days  
 (d) 10 days

**Q56.**

A and B can do a piece of work in 10 days, B and C can do it in 12 days, A and C can do it in 15 days. How long will A take to do it alone?

- (a) 24 days  
 (b) 20 days  
 (c) 40 days  
 (d) 30 days

**Q57.**

If A and B together can finish a piece of work in 20 days. B and C in 10 days and C and A in 12 days, then A, B, C jointly can finish the same work in :

- (a)  $30/7$  days  
 (b) 30 days  
 (c)  $60/7$  days  
 (d)  $7/60$  days

**Q58.**

A and B can do a piece of work in 72 days, B and C can do it in 120 days, and A and C can do it in 90 days. When A, B and C work together, how much work is finished by them in 3 days.

- (a)  $1/40$   
 (b)  $1/20$   
 (c)  $1/30$   
 (d)  $1/10$

**Q59.**

A skilled, a half skilled and an unskilled labourer work for 7, 8 and 10 days respectively and they together get Rs. 369 for their work. If the ratio of their each day work is  $1/3 : 1/4 : 1/6$ , then how much does the trained labourer get (in rupees) ?

- (a) 164  
 (b) 102.50  
 (c) 201.50  
 (d) 143.50

**Q60.**

A can complete a piece of work in 'm' days and B can complete it in 'n' days. How many days will it take to complete the work if both A and B work together ?

- (a) (m+n) days  
 (b)  $(1/m \times 1/n)$  days

(c)  $\frac{m+n}{mn}$  days

(d)  $\frac{mn}{m+n}$  days

**Q61.**

A can do a piece of work in 4 days and B can do it in 12 days. In how many days will they finish the work, both working together ?

(a) 4 days

(b) 6 days

(c) 2 days

(d) 3 days

**Q62.**

A can do  $\frac{1}{4}$  of a work in 10 days. B can do  $\frac{1}{3}$  of the work in 20 days. In how many days can both A and B together do the work?

(a) 30 days

(b) 32 days

(c) 24 days

(d) 25 days

**Q63.**

Raj and Ram working together do a piece of work in 10 days. Raj alone can do it in 12 days. Ram alone will do the work in:

(a) 20 days

(b) 40 days

(c) 50 days

(d) 60 days

**Q64.**

A, B and C are employed to do a piece of work for Rs. 575. A and C are supposed to finish  $\frac{19}{23}$  of the work together, Amount shall be paid to B is:

(a) Rs. 210

(b) Rs. 100

(c) Rs. 200

(d) Rs. 475

**Q65.**

A and B can do a piece of work in 36 days, B and C can do it in 60 days, A and C can do it in 45 days. C alone can do it in:

(a) 90 days

(b) 180 days

(c) 120 days

(d) 150 days

**Q66.**

A and B together can complete a piece of work in 12 days. A alone can complete in 20 days. If B does the work only half a day daily, then in how many days A and B together will complete the work ?

(a) 10 days

(b) 20 days

(c) 11 days

(d) 15 days

**Q67.**

A can do a piece of work in 20 days which B can do in 12 days. B worked at it for 9 days, A can finish the remaining work in:

(a) 5 days

(b) 7 days

(c) 11 days

(d) 3 days

**Q68.**

Two men undertake a job for Rs. 960. They can complete it in 16 days and 24 days respectively. They work along with a third man and take 8 days to complete it. Then the share of the third man should be:

(a) Rs. 155

(b) Rs. 165

(c) Rs. 160

(d) Rs. 150

**Q69.**

If there is a reduction in the number of workers in a factory in the ratio 15 : 11 and an increment in their wages in the rate 22 : 25, then the ratio by which the total wages of the workers should be decreased is:

(a) 6: 5

(b) 5: 6

(c) 3: 7

(d) 3: 5

**Q70.**

Stanis and Paul take a piece of work for Rs. 28,800. One alone could do it in 36 days, the other in 48 days. With the assistance of an expert, they finish it in 12 days. How much remuneration the expert should get?

(a) Rs. 10000

(b) Rs. 18000

(c) Rs. 16000

(d) Rs. 12000

**Q71.**

A can do a piece of work in 25 days and B can do the same work in 30 days, They work together for 5 days, how much of work left ?

(a)  $\frac{15}{30}$

(b)  $\frac{11}{30}$

(c)  $\frac{12}{30}$

(d)  $\frac{19}{30}$

**Q72.**

If x can finish a job in 4 hours and y can finish the same job in 8 hours independently, then they together will finish the job in :

(a) 140 minutes

(b) 120 minutes

(c) 160 minutes

(d) 150 minutes

**Q73.**

x does  $\frac{1}{4}$  of a job in 6 days. y completes rest of the job in 12 days. Then x and y could complete the job together in:

(a) 9 days

(b)  $\frac{65}{8}$  days

(c)  $\frac{48}{5}$  days

(d)  $\frac{22}{3}$  days

**Q74.**

A, B and C can complete a piece of work in 24, 5 and 12 days respectively working together, they will complete the same work in:

- (a) 40/13 days
- (b) 4 days
- (c) 1/24 days
- (d) 7/24 days

**Q75.**

Janardan completes  $\frac{2}{3}$  of his work in 10 days. Time he will take to complete  $\frac{3}{5}$  of the same work, is :

- (a) 4 days
- (b) 8 days
- (c) 6 days
- (d) 9 days

**Q76.**

A and B were assigned to do a job for an amount of Rs. 1,200. A alone can do it in 15 days, while B can do it in 12 days. With the help of C, they can finish in 5 days. The share of amount that C earns is:

- (a) Rs. 300
- (b) Rs. 400
- (c) Rs. 500
- (d) Rs. 600

**Q77.**

A can do a piece of work in 12 days while B alone can do it in 15 days. With the help of C they can finish it in 5 days. If they are paid 960 for the whole work. How much money A gets?

- (a) Rs. 480
- (b) Rs. 240
- (c) Rs. 320
- (d) Rs. 400

**Q78.**

Three persons undertake to complete a piece of work for 1200. The first person can complete the work in 8 days, second person in 12 days and third person in 16 days, They complete the work with the help of a fourth person in 3 days, What does the fourth person get?

- (a) Rs. 180
- (b) Rs. 200
- (c) Rs. 225
- (d) Rs. 250

**Q79.**

A can do a piece of work in 16 days and B in 24 days. They take the help of C and they all together finish the work in 6 days. If the total remuneration for the work is Rs. 400. The amount (in rupees) each will receive, in proportion, to do the work is

- (a) A : 150, B : 100, C : 150
- (b) A : 100, B : 150, C : 150
- (c) A : 150, B : 150, C : 100
- (d) A : 100, B : 150, C : 100

**Q80.**

A and B can do a piece of work in 12 days. B and C in 15 days, C and A in 20 days. A alone can do the work in:

- (a)  $47\frac{1}{3}$  days
- (b) 30 days
- (c) 24 days
- (d) 40 days

**Q81.**

A and B together can do a piece of work in 6 days. If A can alone do the work in 18 days, then the number of days required for B to finish the work is:

- (a) 12 days
- (b) 9 days
- (c) 15 days
- (d) 10 days

**Q82.**

A and B can do a given piece of work in 8 days, B and C can do the same work in 12 days and A, B, C complete it in 6 days. Number of days required to finish the work by A and C is :

- (a) 24 days
- (b) 8 days
- (c) 16 days
- (d) 12 days

**Q83.**

A and B can do a piece of work in 15 days, B and C can do the same work in 10 days and A and C can do the same in 12 days. Time taken by A, B and C together to do the job is:

- (a) 8 days
- (b) 4 days
- (c) 9 days
- (d) 5 days

**Q84.**

In two days A, B and C together can finish  $\frac{1}{2}$  of a work and in another 2 days B and C together can finish  $\frac{3}{10}$  part of the work. Then A alone can complete the whole work in

- (a) 15 days
- (b) 10 days
- (c) 12 days
- (d) 14 days

**Q85.**

A can do a piece of work in 8 days which B can destroy in 3 days. A has worked for 6 days, during the last 2 days of which B has been destroying. How many days must A now work alone to complete the work :

- (a) 7 days
- (b)  $22\frac{1}{3}$  days
- (c)  $23\frac{1}{3}$  days
- (d) 8 days

**Q86.**

A and B together can complete a piece of work in 72 days, B and C together can complete it in 120 days and A and C together in 90 days. In what time can A alone complete the work ?



- (a) 80 days
- (b) 120 days
- (c) 120 days
- (d) 150 days

**Q87.**

A and B can complete a piece of work in 30 days, B and C in 20 days, while C and A in 5 days. If all of them work together the time taken in completing the work will be :

- (a) 10 days
- (b) 12 days
- (c)  $38/3$  days
- (d)  $40/3$  days

**Q88.**

Working efficiencies of P and Q for completing a piece of work are in the ratio 3 : 4. The number of days to be taken by then to complete the work will be in the ratio:

- (a) 3: 2
- (b) 2: 3
- (c) 3 : 4
- (d) 4: 3

**Q89.**

If 6 men and 8 boys can do a piece of work in 10 days and 26 men and 48 boys can do the same in 2 days, then the time taken by 15 men and 20 boys to do the same type of work will be :

- (a) 5 days
- (b) 4 days
- (c) 6 days
- (d) 7 days

**Q90.**

5 men can do a piece of work in 6 days while 10 women can do it in 5 days. In how, days can 5 women and 3 men do it?

- (a) 4 days
- (b) 5 days
- (c) 6 days
- (d) 8 days

**Q91.**

If 10 men or 20 boys can make 260mats in 20 days, then how many mats will be made by 8 men and 4 boys in 20 days?

- (a) 260
- (b) 240
- (c) 280
- (d) 520

**Q92.**

If 3 men or 6 women can, do a piece of work in 16 days, in how many .days can 12 men and 8 women do the same piece of work ?

- (a) 4 days
- (b) 5 days
- (c) 3 days
- (d) 2 days

**Q93.**

If 16 men or 20 women can do a piece of work in 25 days. In what time will 28 men and 15 women do it?

- (a)  $100/7$  days
- (b)  $100/3$  days
- (c)  $75/4$  days
- (d) 10 days

**Q94.**

If 5 men or 8 women can do a piece of work in 12 days, how many days will be taken by 2 men and 4 women to do the same work?

- (a) 15 days
- (b)  $27/2$  days
- (c)  $40/3$  days
- (d) 10 days

**Q95.**

If 3 men or 4 women can plough a field in 43 days, how long will 7 men and 5 women take to plough it?

- (a) 10 days
- (b) 11 days
- (c) 9 days
- (d) 12 days

**Q96.**

A wall of 100 meters can be built by 7 men or 10 women in 10 days, How many days will 14 men and 20 women take to build a wall of 600 metres .

- (a) 15
- (b) 20
- (c) 25
- (d) 30

**Q97.**

6 men or 12 women can do a piece of work in 20 days. In how many days can 8 men and 16 women do twice as big as this work ?

- (a) 2 days
- (b) 5 days
- (c) 15 days
- (d) 10 days

**Q98.**

2 men and 1 women together can complete a piece of work in 14 days, while 4 women and 2 men together can do it in 8 days. If a man gets Rs. 600 per day. how much should a woman get per day ?

- (a) Rs. 400
- (b) Rs. 450
- (c) Rs. 480
- (d) Rs. 360

**Q99.**

Jyoti can do  $3/4$  of a job in 12 days. Mala is twice as efficient as Jyoti. In how many days will mala finish the job?

- (a) 6 days
- (b) 8 days
- (c) 12 days
- (d) 16 days

**Q100.**

A is twice as good a workman as B and B is twice as good a workman as C. If A and B can together finish a piece of work in 4 days, then C can do it by himself in :

- (a) 6 days
- (b) 8 days
- (c) 24 days
- (d) 12 days

**Q101.**

If 1 man or 2 women or 3 boys can complete a piece of work in 88 days, then 1 man, 1 woman and 1 boy together will complete it in :

- (a) 36 days
- (b) 42 days
- (c) 48 days
- (d) 54 days

**Q102.**

Tapas works twice as fast as Mihir. If both of them together complete a work in 12 days, Tapas alone can complete it in:

- (a) 15 days
- (b) 18 days
- (c) 20 days
- (d) 24 days

**Q103.**

2 men and 3 women together or 4 men can complete a piece of work in 20 days. 3 men and 3 women will complete the same work in :

- (a) 12 days
- (b) 18 days
- (c) 18 days
- (d) 19 days

**Q104.**

20 men can complete a piece of work in 20 days. If 30 men and 12 women under take to complete the work, the work will be completed in :

- (a) 10 days
- (b) 12 days
- (c) 15 days
- (d) 16 days

**Q105.**

Twenty women together can complete a piece of work in 16 days, 16 men together can complete the same work in 15 days. The ratio of the working capacity of a man to that of a woman is:

- (a) 3 : 4
- (b) 4 : 3
- (c) 5 : 3
- (d) 4 : 5

**Q106.**

6 men and 8 women can do a piece of work in 10 days. Then 3 men and 4 women can do the same Work in :

- (a) 24 days
- (b) 20 days
- (c) 12 days
- (d) 18 days

**Q107.**

2 men and 3 women can do a piece of work in 10 days while 3 men and 2 women can do the same work in 8 days. Then, 2 men and 1 women can do the same work in:

- (a) 12 days
- (b)  $25/2$  days
- (c) 13 days
- (d)  $27/2$  days

**Q108.**

A is twice as good a workman as B and together they finish a piece of work in 14 days. The number of days taken by A alone to finish the work is :

- (a) 11 days
- (b) 21 days
- (c) 28 days
- (d) 42 days

**Q109.**

5 men and 2 women working together can do four times as much work per hour as a man and a woman together. The work done by a man and a woman together. The work done by a man and a woman should be in the ratio:

- (a) 1 : 2
- (b) 2 : 1
- (c) 1 : 3
- (d) 4 : 1

**Q110.**

Either 8 men or 17 women can paint a house in 33 days. The number of days required to paint three such houses by 12 men and 24 women working at the same rate is:

- (a) 44 days
- (b) 43 days
- (c) 34 days
- (d) 66 days

**Q111.**

A man and a woman working together can do a certain work in 18 days A. Their skills in doing the work are in the ratio 3 : 2. How many days will the woman take to finish the work alone :

- (a) 45 days
- (b) 36 days
- (c) 27 days
- (d) 30 days

**Q112.**

3 men and 4 boys can complete a piece of work in 12 days. 4 men and 3 boys can do the same work in 10 days, Then 2 men and 3 boys can finish the work in?

- (a)  $35/2$  days
- (b)  $60/11$  days
- (c) 8 days
- (d) 22 days

**Q113.**

If 8 men or 12 boys can do a piece of work in 16 days, the number of days required to complete the work by 20 men and 6 boys is :

- (a) 16/3 days
- (b) 19/3 days
- (c) 25/3 days
- (d) 22/3 days

**Q114.**

If 10 men or 20 women or 40 children can do a piece of work in 7 months, then 5 men, 5 women and 5 children together can do half of the work in ?

- (a) 6 months
- (b) 4 months
- (c) 5 months
- (d) 8 months

**Q115.**

2 men and 3 boys can do a piece of work in 10 days while 3 men and 2 boys can do the same work in 8 days. In how many days can do 2 men and 1 boy the work ?

- (a) 8 days
- (b) 7 days
- (c) 25/2 days
- (d) 2 days

**Q116.**

A man, a woman and a boy together can finish a piece of work in 6 days. If a man and a woman can do the work in 10 and 24 days respectively. The days taken by a boy to finish the work is:

- (a) 30 days
- (b) 35 days
- (c) 40 days
- (d) 45 days

**Q117.**

If 40 men or 60 women or 80 children can do a piece of work in 6 months, then 10 men, 10 women and 10 children together do half of the work in:

- (a) 71/13 months
- (b) 6 months
- (c) 72/13 months
- (d) 144/13 months

**Q118.**

Two workers A and B working together completed a job in 5 days. If A had worked twice as efficiently as he actually did, the work would have been completed in 3 days. To complete the job along, A would require:

- (a) 26/5 days
- (b) 25/4 days
- (c) 15/2 days
- (d) 35/4 days

**Q119.**

One man, 3 women and 4 boys can do a piece of work in 96 hours, 2 men and 8 boys can do it in 80 hours, 2 men and 3 women can do it in 120 hours, 5 men and 12 boys can do it in:

- (a) 430/11 hours
- (b) 469/11 hours
- (c) 480/11 hours
- (d) 44 hours

**Q120.**

3 men and 7 women can do a job in 5 days, while 4 men and 6 women can do it in 4 days, the number of days required for a group of 10 women working together, at the same rate as before, to finish the same job is :

- (a) 30 days
- (b) 36 days
- (c) 40 days
- (d) 20 days

**Q121.**

If 12 men or 24 boys can do a work in 66 days, the number of days in which 15 men and 6 boys can do it is :

- (a) 44 days
- (b) 33 days
- (c) 55 days
- (d) 66 days

**Q122.**

One man or two women or three boys can do a piece of work in 88 days. One man, one woman and one boy will do it in :

- (a) 44 days
- (b) 24 days
- (c) 48 days
- (d) 20 days

**Q123.**

4 men and 6 women complete a work in 8 days, 2 men and 9 women also complete in 8 days. The number of days in which 18 women complete the work is :

- (a) 16/3 days
- (b) 17/3 days
- (c) 13/3 days
- (d) 14/3 days

**Q124.**

If 4 men or 8 women can do a piece of work in 15 days, in how many days can 6 man and 12 women do the same piece of work?

- (a) 5 days
- (b) 10 days
- (c) 45 days
- (d) 15 days

**Q125.**

If 15 men can finish a piece of work in 20 days, however it takes 24 women to finish it in 20 days. If 10 men and 8 women undertake to complete the work, then they will take:

- (a) 20 days
- (b) 30 days
- (c) 10 days
- (d) 15 days

**Q126.**

3 men or 5 women can do a work in 12 days. How long will 6 men and 5 women take to finish the work?

- (a) 20 days
- (b) 10 days
- (c) 4 days

(d) 15 days

**Q127.**

A particular job can be completed by a team of 10 men in 12 days, The same job can be completed by a team of 10 women in 6 days. How many days are needed to complete the job if the two teams work together?

(a) 4 days

(b) 6 days

(c) 9 days

(d) 18 days

**Q128.**

A certain number of men can complete a job in 30 days. If there were 5 men more, it could be completed in 10 days less. How many men were in the beginning?

(a) 10

(b) 15

(c) 20

(d) 25

**Q129.**

A Contractor undertakes to make a road in 40 days and employees 25 men. After 24 days, he finds that only one third of the road is made. How many extra men should be employ so that he is able to complete the work 4 days earlier ?

(a) 100

(b) 60

(c) 75

(d) None of these

**Q130.**

A does half as much work as B in one sixth of the time. If together they take 10 days to complete a work, how much time shall B take to do it alone?

(a) 70 days

(b) 30 days

(c) 40 days

(d) 50 days

**Q131.**

Kamal can do a piece of work in 15 days. Bimal is 50 per cent more efficient than Kamal in doing the work. In how many days will Bimal do that work?

(a) 14 days

(b) 12 days

(c) 10 days

(d)  $21\frac{1}{2}$  days

**Q132.**

8 men can do a work in 12 days. After 6 days of work, 4 more men were engaged to finish the work, In how many days would the remaining work be completed?

(a) 2 days

(b) 3 days

(c) 4 days

(d) 5 days

**Q133.**

A certain number of persons can complete a piece of work in 55 days, If there were 6 persons more, the work

could be finished in 11 days less, How many persons were originally there?

(a) 17

(b) 24

(c) 30

(d) 22

**Q134.**

8 men working for 9 hours a day complete a piece of work in 20 days. In how many days can 7 men working for 10 hours a day complete the same piece of work ?

(a)  $144\frac{1}{7}$  days

(b)  $143\frac{1}{7}$  days

(c)  $150\frac{1}{7}$  days

(d)  $156\frac{1}{7}$  days

**Q135.**

639 persons can repair a road in 12 days working 5 hours a day, In how many days will 30 persons working 6 hours a day complete the work?

(a) 210 days

(b) 213 days

(c) 214 days

(d) 215 days

**Q136.**

If 72 men can build a wall of 280 m length in 21 days, how many men could take 18 days to build a similar type of wall of length 100 m?

(a) 30

(b) 10

(c) 18

(d) 28

**Q137.**

If 6 persons working 8 hours a day earn Rs. 8400 per week, then 9 persons working 6 hours a day will earn per week:

(a) Rs. 8400

(b) Rs. 16800

(c) Rs.9450

(d) Rs. 16200

**Q138.**

5 persons can prepare an admission list in 8 days working 7 hours a day, If 2 persons join them so as to complete the work in 4 days, how many hours they need to work.

(a) 10 hours

(b) 9 hours

(c) 12 hours

(d) 8 hours

**Q139.**

A mat-weavers can weave 4 mats in 4 days. At the same rate how many mats would be woven by 8 mat-weavers in 8 days ?

(a) 4

(b) 8

(c) 12

(d) 16

**Q140.**

10 men working 6 hours a day can complete a work in 18 days. How many hours a day must 15 men work to complete the same work in 12 days?

- (a) 6 hrs/days
- (b) 10 hrs/days
- (c) 12 hrs/days
- (d) 15 hrs/days

**Q141.**

A certain number of men can do a work in 60 days. If there were eight more men, it could be complete in 10 days less, How many men were there in the beginning :

- (a) 70
- (b) 55
- (c) 45
- (d) 40

**Q142.**

12 persons can do a piece of work in 4 days. How many persons are required to complete 8 times the work in half the time ?

- (a) 192
- (b) 190
- (c) 180
- (d) 144

**Q143.**

A work could be completed in 100 days by some workers. However, due to the absence of 10 workers, it was completed in 110 days. The original number of workers was :

- (a) 100
- (b) 110
- (c) 55
- (d) 50

**Q144.**

A job can be completed by 12 men in 12 days. How many extra days will be needed to complete the job if 6 men leave after working for 6 days ?

- (a) 3 days
- (b) 6 days
- (c) 12 days
- (d) 24 days

**Q145.**

Two persons can complete a piece of work in 9 days. How many more persons are needed to complete twice the work in 12 days ?

- (a) 3
- (b) 2
- (c) 4
- (d) 1

**Q146.**

A contractor undertook to complete a project in 90 days and employed 60 men on it. After 60 days, he found that  $\frac{3}{4}$  of the work has already been completed. How many men can he discharge so that the project may be completed exactly on time?

- (a) 40
- (b) 20
- (c) 30
- (d) 15

**Q147.**

60 men could complete a piece of work in 250 days. The worked together for 200 days. After that the work had to be stopped for 10 day due to bad weather. How many more men should be engaged to complete the work in time ?

- (a) 10
- (b) 15
- (c) 18
- (d) 20

**Q148.**

If 28 men complete  $\frac{7}{8}$  of a piece of work in a week, then the number of men, who must be engaged to get the remaining work completed in another week, is :

- (a) 5
- (b) 6
- (c) 4
- (d) 3

**Q149.**

A 10 hectare field is reaped by 2 men, 3 women and 4 children together in 10 days. If working capabilities of a man, a woman and a child are in the ratio 5 : 4 : 2, then a 16 hectare field will be reaped by 6 men, 4 women and 7 children in :

- (a) 5 days
- (b) 6 days
- (c) 7 days
- (d) 8 days

**Q150.**

If  $p$  men working  $p$  hours per day for  $p$  days produce  $p$  units of work, then the units of work produced by  $n$  men working  $n$  hours a day for  $n$  days is :

- (a)  $p^{2}/n^{2}$
- (b)  $p^{3}/n^{2}$
- (c)  $n^{2}/p^{2}$
- (d)  $n^{3}/p^{2}$

**Q151.**

If two persons with equal abilities can do two jobs in two days then 100 persons with equal abilities can do 100 similar jobs in :

- (a) 100 days
- (b) 10 days
- (c) 5 days
- (d) 2 days

**Q152.**

A road of 5 km length will be constructed in 100 days. So 280 workers were employed. But after 80 days it was found that only  $\frac{7}{2}$  km road was completed. Now how many more people were need to finish the work in the specified time?

- (a) 480

- (b) 80
- (c) 200
- (d) 100

**Q153.**

7 men can complete a piece of work in 12 days. How many additional men will be required to complete double the work in 8 days?

- (a) 28
- (b) 21
- (c) 14
- (d) 7

**Q154.**

A does half as much work as B in three-fourth of the time taken by B. If together they take 18 days to complete the work, how much time shall B take to do it alone?

- (a) 30 days
- (b) 35 days
- (c) 40 days
- (d) 45 days

**Q155.**

A does half as much work as B in one third of the time taken by B. If together they take 10 days to complete a work, then the time taken by B alone to do it would have been :

- (a) 30 days
- (b) 25 days
- (c) 6 days
- (d) 12 days

**Q156.**

A can do a work in 21 days. B is 40% more efficient than A. The number of days required for B to finish the same work alone is :

- (a) 10 days
- (b) 12 days
- (c) 15 days
- (d) 18 days

**Q157.**

A can do a piece of work in 9 days. If B is 50% more efficient than A, then in how many days can B do the same work ?

- (a) 13.5 days
- (b) 4.5 days
- (c) 6 days
- (d) 3 days

**Q158.**

A is 30% more efficient than B and can alone do a piece of work in 23 days. In how many days A and B working together, can finish the job is :

- (a) 11 days
- (b) 13 days
- (c) 20 days
- (d) 21 days

**Q159.**

A can do a certain job in 12 days. B is 60 % more efficient than A. To do the same job B alone would take:

- (a) 15/2 days
- (b) 8 days
- (c) 10 days
- (d) 7 days

**Q160.**

'x' number of men can finish a piece of work in 30 days. If there were 6 men more, the work could be finished in 10 days less. The original number of men is :

- (a) 6
- (b) 10
- (c) 12
- (d) 15

**Q161.**

Working 8 hours a day, Anu can copy a book in 18 days. How many hours a day should she work so as to finish the work in 12 days?

- (a) 12 hours
- (b) 10 hours
- (c) 11 hours
- (d) 13 hours

**Q162.**

If the work done by  $(x - 1)$  men in  $(x + 1)$  days and the work done by  $(x + 2)$  men in  $(x - 1)$  days are in the ratio 9 : 10, then the value of x is equal to :

- (a) 5
- (b) 6
- (c) 7
- (d) 8

**Q163.**

A can do a piece of work in 70 days and B is 40% more efficient than A. Then the number of days taken by B to do the same work is:

- (a) 40 days
- (b) 60 days
- (c) 50 days
- (d) 45 days

**Q164.**

A can do a certain work in 12 days. B is 60% more efficient than A, How many days will B and A together take to do the same job ?

- (a) 80/13 days
- (b) 70/13 days
- (c) 75/13 days
- (d) 60/13 days

**Q165.**

Some carpenters promised to do a job in 9 days but 5 of them were absent and remaining men did the job in 12 days. The original number of carpenters was:

- (a) 24
- (b) 20
- (c) 16
- (d) 18

**Q166.**

Some persons can do a piece of work in 12 days. Two times the number of such persons will do half of the work in:

- (a) 9 days
- (b) 6 days
- (c) 5 days
- (d) 3 days

**Q167.**

If 80 persons can finish a work in 16 days by working 6 hours a day, the number of hours a day should 64 persons work to finish that same job in 15 days is :

- (a) 5 hrs
- (b) 7 hrs
- (c) 8 hrs
- (d) 6 hrs

**Q168.**

Three men can complete a piece of work in 6 days. Two days after they started the work, 3 more men joined them. How many days will they take to complete the remaining work?

- (a) 1 days
- (b) 2 days
- (c) 3 days
- (d) 4 days

**Q169.**

If 4 men or 6 women can do a piece of work in 12 days working 7 hours a day; how many days will it take to complete a work twice as large with 10 men and 3 women working together 8 hours a day ?

- (a) 6 days
- (b) 7 days
- (c) 8 days
- (d) 10 days.

**Q170.**

If  $x$  men can do a piece of work in  $x$  days then the number of days in which  $y$  men can do the same Work is :

- (a)  $xy$  days
- (b)  $y^2/x$  days
- (c)  $x^2/y$  days
- (d)  $x^2y$  days

**Q171.**

A contractor undertook to finish work in 92 days and employed 110 men. After 48 days, he found that he had already done  $3/5$  work, the number of men he can withdraw so that his work may still be finished in time is :

- (a) 45
- (b) 40
- (c) 35
- (d) 30

**Q172.**

A man undertakes to do a certain work in 150 days. He employs 200 men. He finds that only a quarter of the work is done in 50 days. The number of additional men

that should be appointed so that the whole work will be finished in time is:

- (a) 75
- (b) 100
- (c) 125
- (d) 50

**Q173.**

A contractor undertook to finish a certain work in 124 days and employed 120 men. After 64 days, he found that he had already done  $2/3$  of the work. How many men can be discharged now so that the work may finish in time?

- (a) 48
- (b) 56
- (c) 40
- (d) 50

**Q174.**

Two men can do a piece of work in  $x$  days. But  $y$  women can do that in 3 days. Then the ratio of the work done by 1 man and 1 woman is

- (a)  $3y : 2x$
- (b)  $2x : 3y$
- (c)  $x : y$
- (d)  $2y : 3x$

**Q175.**

A farmer can plough a field working 6 hours per day in 18 days. The worker has to work how many hours per day to finish the same work in 12 days?

- (a) 7 hrs
- (b) 9 hrs
- (c) 11 hrs
- (d) 13 hrs

**Q176.**

15 men take 20 days to complete a job working 8 hours a day. The number of hours a day should 20 men take to complete the job in 12 days:

- (a) 5 hours
- (b) 10 hours
- (c) 15 hours
- (d) 18 hours

**Q177.**

How many men need to be employed to complete the whole job in 5 days, If 15 men can complete  $1/3$  of the job in 7 days ?

- (a) 20
- (b) 21
- (c) 45
- (d) 63

**Q178.**

If 12 carpenters working 6 hours a day can make 460 chairs in 240 days, then number of chairs made by 18 carpenters in 360 days each working 8 hours a day

- (a) 1320
- (b) 1380
- (c) 1260

(d) 920

**Q179.**

If 90 men can do a certain job in 16 days, working 12 hours/day, then the part of that work which can be completed by 70 men in 24 days, working 8 hours/day is:

(a)  $5/8$ (b)  $2/3$ (c)  $1/3$ (d)  $7/9$ **Q180.**

A company employed 200 workers to complete a certain work in 150 days. If only  $1/4^{\text{th}}$  of the work had 150 days. If only been done in 50 days, then in order to complete the whole work in time, the number of additional workers to be employed were:

(a) 100

(b) 600

(c) 300

(d) 200

**Q181.**

If 20 women can lay a road of length 100m in 10 days. 10 women can lay the same road of length 50m in:

(a) 5 days

(b) 15 days

(c) 10 days

(d) 20 days

**Q182.**

If 12 men working 8 hours a day complete the work in 10 days, how long would 16 men working  $15/2$  hours a day take to complete the same work?

(a) 8 days

(b) 10 days

(c) 6 days

(d) 7 days

**Q183.**

A contractor was engaged to construct a road in 16 days. After working for 12 days with 20 labours it was found that only  $5/8^{\text{th}}$  of the road had been constructed. To complete the work in stipulated time the number of extra labours required are

(a) 16

(b) 12

(c) 10

(d) 18

**Q184.**

A and B can do a piece of work in 18 and 24 days respectively. They worked together for 8 days and then A left. The remaining work was finished by B in:

(a) 5 days

(b)  $16/3$  days

(c) 8 days

(d) 10 days

**Q185.**

A can do a piece of work in 12 days and B can do it in 18 days. They work together for 2 days and then A leaves.

How long will B take to finish the remaining work ?

(a) 6 days

(b) 8 days

(c) 10 days

(d) 13 days

**Q186.**

A, B and C can complete a piece of work in 10, 12 and 15 days respectively, They started the work together. But A left the work before 5 days of its completion, B also left the work 2 days after A left. In how many days was the work completed?

(a) 4 days

(b) 5 days

(c) 7 days

(d) 8 days

**Q187.**

A can complete a piece of work in 10 days, B in 15 days and C in 20 days, A and C worked together for two days and then A was replaced by B. In how many days, altogether, work was completed ?

(a) 12 days

(b) 10 days

(c) 6 days

(d) 8 days

**Q188.**

A and B can do a job in 6 and 12 days respectively. They began the work together but A leaves after 3 days. Then the total number of days need for the completion of the work is:

(a) 4 days

(b) 5 days

(c) 6 days

(d) 9 days

**Q189.**

A and B can together finish a work in 30 days. They worked together for 20 days and then B left, and A finished the remaining work in 20 days so, A can finished whole work in :

(a) 50 days

(b) 60 days

(c) 48 days

(d) 54 days

**Q190.**

A can finish a piece of work in 24 days, B in 9 days and C in 12 days B and C start the work but are forced to leave after 3 days. The remaining work was done by A in :

(a) 5 days

(b) 6 days

(c) 10 days

(d)  $21/2$  days**Q191.**

A and B can do a piece of work in 28 and 35 days respectively. They began to work together but A leaves



after sometime and B completed remaining work in 17 days. After how many days did A leave ?

- (a) 14 days
- (b) 9 days
- (c) 8 days
- (d) 7, days

**Q192.**

A can do a piece of work in 60 days, He works for 15 days and then B alone finishes the remaining work in 30 days. They together can finish the work in :

- (a) 24 days
- (b) 25 days
- (c) 30 days
- (d) 32 days

**Q193.**

A and B can complete a piece of work in 15 days and 10 days respectively. They started doing the work together but after 2 days, B had to leave and A alone completed the remaining work. The whole work was completed in :

- (a) 10 days
- (b) 8 days
- (c) 12 days
- (d) 15 days

**Q194.**

A and B can do a piece of work in 20 days and 12 days respectively, A started the work alone and then after 4 days B joined him till the completion of the work. How long did the work last ?

- (a) 10 days
- (b) 20 days
- (c) 15 days
- (d) 6 days

**Q195.**

A and B can do a piece of work in 45 days and 40 days respectively. They began the work together but A left after some time and B completed the remaining work in 23 days. After how many days of work did A leave?

- (a) 10 days
- (b) 9 days
- (c) 8 days
- (d) 5 days

**Q196.**

A man and a boy can complete a piece of work together in 24 days. If for the last boy alone does the work then it is completed in 28 days. How long the man will take to complete the work alone ?

- (a) 72 days
- (b) 24 days
- (c) 20 days
- (d) 36 days

**Q197.**

A can do a piece of work in 18 days and B in 12 days. They began the work together, but B left the work 3 days before its completion. In how many days, in all was the work completed ?

- (a) 12 days
- (b) 10 days
- (c) 9.6 days
- (d) 9 days

**Q198.**

A and B can separately complete a piece of work in 20 days and 30 days respectively. They worked together for some time, then B left the work. If A completed the rest of the work in 10 days, then B worked for :

- (a) 6 days
- (b) 8 days
- (c) 12 days
- (d) 16 days

**Q199.**

A and B alone can complete a piece of work in 9 days and 18 days respectively. They worked together, however, 3 days before the completion of the work A left. In how many days was the work completed?

- (a) 13 days
- (b) 8 days
- (c) 6 days
- (d) 5 days

**Q200.**

A and B can do a piece of work in 12 days and 15 days respectively. They began to work together but A left after 4 days. In how many more day would B alone complete the remaining work ?

- (a)  $20/3$  days
- (b)  $25/3$  days
- (c) 6 days
- (d) 5 days

**Q201.**

A can complete a piece of work in 18 days, B completes in 20 days and C in 30 days, B and C together started the work and forced to leave after 2 days. The time taken by A alone to complete the remaining work is:

- (a) 10 days
- (b) 12 days
- (c) 15 days
- (d) 16 days

**Q202.**

A alone can complete a piece of work in 18 days and B alone in 15 days, B alone worked at it for 10 and then left the work, In how many more days, will A alone complete the remaining work ?

- (a) 5 days
- (b)  $11/2$  days
- (c) 6 days
- (d) 8 days

**Q203.**

A can do a piece of work in 12 days. When he had worked for 3 days. B joined him. If they complete the work in 3 more days, in how many days can B alone finish the work?

- (a) 6 days

- (b) 12 days
- (c) 4 days
- (d) 8 days

**Q204.**

45 men can complete a piece of work in 16 days. Four days after they started working, 36 more men joined them. How many days will they take to complete the remaining work ?

- (a) 6 days
- (b) 8 days
- (c) 6 days
- (d) 7 days

**Q205.**

A can do a piece of work in 12 days and B in 15 days. They work together for 5 days and then B left. The days taken by A to finish the remaining work is:

- (a) 3
- (b) 5
- (c) 10
- (d) 121

**Q206.**

A can finish a piece of work in 18 days and B can do the same work in 15 days, B worked for 10 days and left the job. In how many days, A alone can finish the remaining work?

- (a) 6 days
- (b)  $11\frac{1}{2}$  days
- (c) 5 days
- (d) 8 days

**Q207.**

A and B together can complete a piece of work in 3 days. They start together. But, after 2 days, B left the work, If the work is completed after 2 more days, B alone could do the work in:

- (a) 10 days
- (b) 4 days
- (c) 6 days
- (d) 8 days

**Q208.**

A can do a piece of work in 20 days and B in 30 days. They work together for 7 days and then both leave the work. Then C alone finishes the remaining work in 10 days. In how many days will C finish the full work?

- (a) 25 days
- (b) 30 days
- (c) 24 days
- (d) 20 days

**Q209.**

A and B together can complete a job in 8 days. Both B and A working alone can finish the same job in 12 days. A and B commence work on the job, and work for 4 days, where upon A leaves, B continues for 2 more days, and then he leaves too, C now starts working, and finishes the job. How many days will C require?

- (a) 5 days

- (b) 8 days
- (c) 3 days
- (d) 4 days

**Q210.**

A and B can together finish a piece of work in 30 days. They worked at it for 20 days and then B left. The remaining work was done by A alone in 20 more days. A alone can finish the work in:

- (a) 60 days
- (b) 54 days
- (c) 48 days
- (d) 50 days

**Q211.**

A, B and C can do a job in 6 days, 12 days and 15 days respectively. After  $\frac{1}{8}$  of the work is completed, C leaves the job. Rest of the work is done by A and B together, Time taken to finish the remaining work is:

- (a)  $\frac{35}{6}$  days
- (b)  $21\frac{1}{4}$  days
- (c)  $7\frac{1}{2}$  days
- (d)  $15\frac{1}{3}$  days

**Q212.**

16 women take 12 days to complete a work which can be completed by 12 men in 8 days. 16 men started working and after 3 days 10 men left and 4 women joined them. How many days will they take to complete the remaining work?

- (a) 4 days
- (b) 6 days
- (c) 8 days
- (d) 10 days

**Q213.**

40 men can complete a piece of work in 18 days. Eight days after they started working together, 10 more men joined them. How many days will they now take to complete the remaining work ?

- (a) 6 days
- (b) 8 days
- (c) 10 days
- (d) 12 days

**Q214.**

20 men can do a piece of work in 18 days. They worked together for 3 days, then 5 men joined then. In how many more days is the work completed?

- (a) 12 days
- (b) 14 days
- (c) 13 days
- (d) 15 days

**Q215.**

A, B and C can complete a piece of work in 10, 12 and 15 days respectively. A left the work 5 days before the work was completed and B left 2 days after A had left number of days required to complete the whole work was:

- (a)  $26\frac{2}{3}$  days
- (b) 6 days

(c) 20/3 days

(d) 7 days

**Q216.**

X alone can complete a piece of work in 40 days. He worked for 8 days and left. Y alone completed the remaining work in 16 days. How long would X and Y together take to complete the work ?

(a) 40/3 days

(b) 14 days

(c) 15 days

(d) 50/3 days

**Q217.**

A and B together can do a piece of work in 12 days which B and C together do in 16 days. If A works for 5 days, B works for 7 days then C complete the remaining work in 13 days. In how much time B alone do the whole work.

(a) 48 days

(b) 24 days

(c) 16 days

(d) 12 days

**Q218.**

A and B together can do a piece of work in 30 days, B and C together can do it in 20 days, A starts the work and work on it for 5 days, then B takes up and work for 15 days. Finally C finishes the work in 18 days. The number of days in which C alone can do the work where doing it separately is:

(a) 120 days

(b) 40 days

(c) 60 days

(d) 24 days

**Q219.**

P and Q together can do a job in 6 days. Q and R can finish the same job in 60/7 days. P started the work and worked for 3 days. Q and R continued for 6 days. Then the difference of days in which R and P can complete the job alone is:

(a) 10 days

(b) 8 days

(c) 12 days

(d) 15 days

**Q220.**

If the expenditure of gas on burnining 6 burners for 6 hours a day for 8 days is Rs. 450, then how many burners can be used for 10 days at 5 hours a day for Rs. 625 ?

(a) 12

(b) 16

(c) 4

(d) 8

**Q221.**

X can do a piece of work in 4 days. When he had worked for 4 days, Y joined him. If complete work was finished in 16 days. Y can alone finish that work in:

(a) 27 days

(b) 36 days

(c) 42 days

(d) 18 days

**Q222.**

Working efficiencies of P and Q for Completing a piece of work are in the ratio 3: 4. The number of days to be taken by them to complete the work will be in the ratio :

(a) 3 : 2

(b) 2: 3

(c) 3 : 4

(d) 4: 3

**Q223.**

A is thrice as good a workman as B and is, therefore able to finish a piece of work in 60 days less than B. The time (in days) in which they can do it together is:

(a) 22 days

(b) 45/2 days

(c) 23 days

(d) 93/4

**Q224.**

To complete a piece of work, A takes 50% more time than B. If together they take 18 days to complete the work, how much time will B take to do it?

(a) 30 days

(b) 35 days

(c) 40 days

(d) 45 days

**Q225.**

A, B and C completed a work costing Rs. 1,800. A worked for 6 days, B for 4 days and C for 9 days. If their daily wages are in the ratio of 5 : 6 : 4, how much amount will be received by A?

(a) Rs. 800

(b) Rs. 600

(c) Rs. 900

(d) Rs. 750

**Q226.**

A takes twice as much time as B and thrice as much as C to complete a piece of work. They together complete the work in 1 day. In what time, will A alone complete the work.

(a) 9 days

(b) 5 days

(c) 6 days

(d) 4 days

**Q227.**

A and B together can complete a piece of work in 15 days. A is 150% more efficient worker than B. How long will A take to complete the work alone?

(a) 20 days

(b) 21 days

(c) 21.4 days

(d) 22.5 days

**Q228.**

A is thrice as good a workman as B and therefore is able to finish a job in 40 days less than B. Working together, they can do it in:

- (a) 14 days
- (b) 13 days
- (c) 20 days
- (d) 15 days

**Q229.**

A and B can do a job together in 12 days. A is 2 times as efficient as B. In how many days can B alone complete the work ?

- (a) 18 days
- (b) 9 days
- (c) 36 days
- (d) 12 days

**Q230.**

P is thrice as good a workman as Q and therefore able to finish a job in 48 days less than Q. working together, they can do it in :

- (a) 18 days
- (b) 24 days
- (c) 30 days
- (d) 12 days

**Q231.**

To do a certain work, B would take time thrice as long as A and C together and C twice as long as A and B together. The three men together complete the work in 10 days. The time taken by A to complete the work separately is:

- (a) 22 days
- (b) 24 days
- (c) 30 days
- (d) 20 days

**Q232.**

A does 20% less work than B. If A can complete a piece of work in  $15\frac{1}{2}$  hours. Then B can do it in :

- (a)  $13\frac{1}{2}$  hours
- (b) 6 hours
- (c)  $11\frac{1}{2}$  hours
- (d) 5 hours

**Q233.**

A can do a piece of work in 6 days. B is 25% more efficient than A. How long would B alone take to finish this work?

- (a)  $24\frac{1}{5}$  days
- (b)  $10\frac{1}{3}$  days
- (c)  $21\frac{1}{4}$  days
- (d)  $8\frac{1}{3}$  days

**Q234.**

Sunil completes a piece of work in 4 days, whereas Dinesh completes the work in 6 days. Ramesh does the work  $\frac{3}{2}$  times as fast as Sunil. The three together can complete the work in :

- (a)  $17\frac{1}{12}$  days
- (b)  $12\frac{1}{7}$  days
- (c)  $11\frac{1}{8}$  days

(d)  $24\frac{1}{19}$  days

**Q235.**

A takes three times as long as B and C together to do a job. B takes four times as long as A and C together to do the work. If all the three, working together can complete the job in 24 days, then the number of days. A alone will take to finish the job is:

- (a) 100
- (b) 96
- (c) 95
- (d) 90

**Q236.**

A man is twice as fast as a woman and a woman is twice as fast as a boy in doing a work. If all of the, a man, a woman and a boy can finish the work in 7 days, A boy will do it alone ?

- (a) 49
- (b) 7
- (c) 6
- (d) 42

**Q237.**

A's 2 days work is equal to B's 3 days work. If A can complete the work in 8 days, then to complete the work B will take:

- (a) 15 days
- (b) 12 days
- (c) 16 days
- (d) 14 days

**Q238.**

If A, B and C can complete a piece of work in 6 days. If A can work twice faster than B and thrice faster than C, then the number of days C alone can complete the work is :

- (a) 44
- (b) 33
- (c) 22
- (d) 11

**Q239.**

If a man earns Rs. 2000 for his first 50 hours of work in a week and is then paid one and one half times his regular hourly rate for additional hours, then the hours must he work to make Rs. 2300 in a week is:

- (a) 6 hours
- (b) 7 hours
- (c) 4 hours
- (d) 5 hours

**Q240.**

A can do half of a piece of work in 1 day, whereas B can do full. B can do half the work as C in 1 day. The ratio of their efficiencies of work is:

- (a) 1 : 2 : 4
- (b) 2 : 1 : 4
- (c) 4 : 2 : 1
- (d) 2 : 4 : 1

**Q241.**

A can do three times the work done by B in one day. They together finish  $\frac{2}{5}$  of the work in 9 days, The number of days by which B can do the work alone are :

- (a) 120 days
- (b) 100 days
- (c) 30 days
- (d) 90 days

**Q242.**

The average wages of 500 workers were found to be Rs. 200. Later on, it was discovered that the wages of two workers were misread as 180 and 20 instead of 80 and 220. The correct average wages are :

- (a) Rs. 200.10
- (b) R 200.20
- (c) Rs. 200.50
- (d) Rs. 201.00

**Q243.**

A can do a certain work in the same time in which B and C together can do it. If A and B together could do it in 10 days and C alone in 50 days, then B alone could do the work in:

- (a) 15 days
- (b) 20 days
- (c) 25 days
- (d) 30 days

**Q244.**

A can write 75 pages in 25 hrs. A and B together can write 135 pages in 27 hrs. In what time can B write 42 pages ?

- (a) 17 hrs
- (b) 19hrs
- (c) 21 hrs
- (d) 23hrs

**Q245.**

A and B can complete a piece of work in 12 and 18 days respectively. A begins to do the work and they work alternatively one at a time for one day each. The whole work will be completed in:

- (a)  $43\frac{1}{3}$  days
- (b)  $46\frac{1}{3}$  days
- (c)  $48\frac{1}{3}$  days
- (d)  $56\frac{1}{3}$  days

**Q246.**

A labourer was appointed by a contractor on the condition he would be paid Rs. 75 for each day of his work but would be, fined at the rate of Rs. 15 per day for his absent. After 20 days, the contractor paid the labourer Rs. 1140. The number of days the labourer absented from work was:

- (a) 3 days
- (b) 5 days
- (c) 4 days
- (d) 2 days

**Q247.**

40 men can complete a piece of work in 40 days. They started the work together. But at the end of each 10<sup>th</sup> day, 5 men left the job. The work would have been completed in

- (a)  $170\frac{1}{3}$  days
- (b)  $160\frac{1}{3}$  days
- (c) 52 days
- (d) 50 days

**Q248.**

A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day ?

- (a) 10 days
- (b) 12 days
- (c) 15 days
- (d) 20 days

**Q249.**

A and B working separately can do a piece of work in 9 and 12 days respectively. If they work for a day alternately with A beginning work would be completed in:

- (a)  $32\frac{1}{3}$  days
- (b)  $21\frac{1}{2}$  days
- (c)  $41\frac{1}{4}$  days
- (d)  $31\frac{1}{3}$  days

**Q250.**

A can do a piece of work in 5 days less than the time take by B to do it. If both of them together 100/9 days, then the time taken by 'B' alone to do the same work (in days) is :

- (a) 15 days
- (b) 20 days
- (c) 25 days
- (d) 30 days

**Q251.**

A takes 10 days less than the time taken by B to finish a piece of work. If both A and B can do it in 12 days, then the time taken by B alone to finish the work is A :

- (a) 30 days
- (b) 27 days
- (c) 20 days
- (d) 25 days

**Q252.**

A, B and C can do a piece of work in 30, 20 and 10 days respectively. A is assisted by B on one day and by C on the next day, alternatively. How long would the work take to finish

- (a)  $75\frac{1}{8}$  days
- (b)  $40\frac{1}{8}$  days
- (c)  $108\frac{1}{13}$  days
- (d)  $48\frac{1}{13}$  days

**Q253.**

Dinesh and Rakesh are working on an Assignment, Dinesh takes 6 hours to type 32 pages on a computer, while Rakesh takes 5 hours to type 40 pages. How much

time will they take working together on different computers to type an assignment of 110 page ?

- (a) 7 hrs, 30 min.
- (b) 8 hrs
- (c) 8 hrs, 15 min
- (d) 8 hrs, 25 min

**Q254.**

A can do as much work as B and C together can do. A and B can together do a piece of work in 9 hours 36 minutes and C can do it in 48 hours. The time (in hours) that B needs to do the work alone, is :

- (a) 18 hrs
- (b) 24 hrs
- (c) 30 hrs
- (d) 12 hrs

**Q255.**

Three men A, B and C working together can do a job in 6 hours less time than A alone, in 1 hour less time than B alone and in one half the time needed by C when working alone. Then A and B together can do the job in :

- (a)  $2/3$  hours
- (b)  $2/3$  hours
- (c)  $3/2$  hours
- (d)  $4/3$  hours

**Q256.**

A and B working separately can do a piece of work in 9 and 15 days respectively. If they work for a day alternatively, with A beginning, then the work will be completed in

- (a) 10 days
- (b) 11 days
- (c) 9 days
- (d) 12 days

**Q257.**

12 monkeys can eat 12 bananas in 12 minutes. In how many minutes can 4 monkeys eat 4 bananas?

- (a) 4 minutes
- (b) 10 minutes
- (c) 12 minutes
- (d) 8 minutes

**Q258.**

Two workers A and B are engaged to do a piece of work. A working alone would take 8 hours more to complete the work that when work together. If B worked alone, would take  $9/2$  hours more than when work together. The time required to finish the work together is:

- (a) 5 hours
- (b) 8 hours
- (c) 4 hours
- (d) 6 hours

**Q259.**

x can copy 80 pages in 20 hours, x and y together can copy 135 pages in 27 hours. Then y can copy 20 pages in :

- (a) 20 hours

(b) 24 hours

(c) 3 hours

(d) 12 hours

**Q260.**

Work done by  $(x+4)$  men in  $(x+5)$  days is equal to the work done by  $(x-5)$  men in  $(x+20)$  days. Then the value of x is :

- (a) 15
- (b) 20
- (c) 25
- (d) 30

**Q261.**

Ganga and Saraswati, working separately can mow a field in 8 and 12 hours respectively. If they work in stretches of one hour alternatively, Ganga beginning at 9 am, when will the mowing be completed?

- (a) 6 p.m.
- (b) 6.30 p.m.
- (c) 5 p.m.
- (d) 5.30 p.m.

**Q262.**

A and B can separately finish a piece of work in 20 days and 15 days respectively. They worked together for 6 days, after which B was replaced by C. If the work was finished in next 4 days, then the number of days in next 4 days, then the number of days in which C along could do the work is:

- (a) 60 days
- (b) 40 days
- (c) 50 days
- (d) 30 days

**Q263.**

If 4 men and 6 women can complete a work in 8 days while 3 men and 7 women can complete it in 10 days then 10 women complete it in:

- (a) 35 days
- (b) 50 days
- (c) 45 days
- (d) 40 days

**Q264.**

A can do a piece of work in 12 days and B in 24 days. If they work together, in how many days will they finish the work?

- (a) 20 days
- (b) 8 days
- (c) 12 days
- (d) 15 days

**Q265.**

A, B and C working separately can do a piece of work in 11 days, 20 days and 55 days respectively. In how many days the work will be completed if A is assisted by B and C on alternate days?

- (a) 8
- (b) 4
- (c) 6

(d) 2

**ANSWER :**

- 1 c    2 a    3 c    4 a    5 c    6 c
- 7 c    8 d    9 b    10 b    11 b    12 c
- 13 d    14 d    15 a    16 b    17 d    18 a
- 19 c    20 c    21 c    22 a    23 c    24 a
- 25 b    26 b    27 c    28 c    29 c    30 a
- 31 b    32 b    33 c    34 c    35 a    36 c
- 37 c    38 a    39 a    40 c    41 a    42 d
- 43 c    44 d    45 a    46 a    47 d    48 b
- 49 d    50 b    51 c    52 c    53 c    54 b
- 55 a    56 a    57 c    58 c    59 d    60 d
- 61 d    62 c    63 d    64 b    65 b    66 d
- 67 a    68 c    69 a    70 d    71 d    72 c
- 73 c    74 a    75 d    76 a    77 d    78 c
- 79 a    80 b    81 b    82 b    83 a    84 b
- 85 b    86 c    87 b    88 d    89 b    90 b
- 91 a    92 c    93 d    94 c    95 d    96 a
- 97 c    98 a    99 b    100 c    101 c    102 b
- 103 b    104 a    105 b    106 b    107 b    108 b
- 109 b    110 c    111 a    112 a    113 a    114 d
- 115 c    116 c    117 d    118 c    119 c    120 d
- 121 a    122 c    123 a    124 a    125 a    126 c
- 127 a    128 a    129 c    130 c    131 c    132 c
- 133 b    134 a    135 b    136 a    137 c    138 a
- 139 d    140 a    141 d    142 a    143 b    144 b
- 145 d    146 b    147 b    148 c    149 d    150 d
- 151 d    152 c    153 c    154 a    155 b    156 c
- 157 c    158 b    159 a    160 c    161 a    162 d
- 163 c    164 d    165 b    166 d    167 c    168 b
- 169 b    170 c    171 d    172 b    173 b    174 a
- 175 b    176 b    177 d    178 b    179 d    180 a
- 181 c    182 a    183 a    184 b    185 d    186 c
- 187 d    188 c    189 b    190 c    191 c    192 a
- 193 c    194 a    195 b    196 d    197 d    198 a
- 199 b    200 c    201 c    202 c    203 a    204 c
- 205 a    206 a    207 c    208 c    209 d    210 a
- 211 c    212 b    213 b    214 a    215 d    216 a
- 217 a    218 d    219 a    220 d    221 b    222 d
- 223 b    224 a    225 b    226 c    227 b    228 d
- 229 c    230 a    231 b    232 b    233 a    234 d
- 235 b    236 a    237 b    238 b    239 d    240 a
- 241 d    242 b    243 c    244 c    245 a    246 c
- 247 a    248 c    249 c    250 c    251 a    252 a
- 253 c    254 c    255 d    256 b    257 c    258 d
- 259 a    260 b    261 b    262 b    263 d    264 d
- 265 a

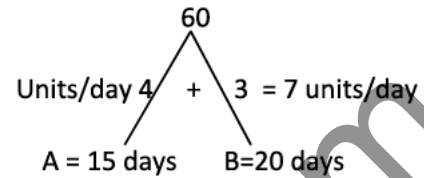
1. (c)



(A)            (B)

A's one day work = 3 units  
 B's one day work = 2 units  
 (A+B) complete the whole work in  
 $\frac{T.W}{\text{eff of } A+B} = \frac{18}{(3+2)} = 3.6 \text{ days}$

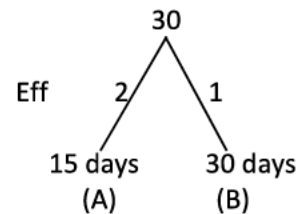
2. (c)



4 days work of A and B is  $7 \times 4 = 28$  units  
 Work left  $60 - 28 = 32$  units  
 $\frac{\text{Rest work}}{\text{Total work}} = \frac{32}{60}$   
 $\text{fraction} = \frac{8}{15}$

3. (c) Cultivate in 1 day

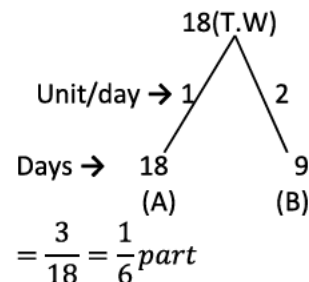
A can cultivate  $\frac{2}{5}$ th of land in 6 days  
 A can cultivate 1 part of land in  $6 \times \frac{5}{2}$   
 = 15 days  
 B can cultivate  $\frac{1}{3}$ rd of land in 10 days  
 B can cultivate 1 part of land in 30 days



T.W = 30 units  
 $\frac{4}{5}$ th of work =  $\frac{4}{5} \times 30 = 24$  units  
 $\therefore \frac{4}{5}$ th work done by A+B in  
 $= \frac{24}{3} \text{ days} = 8 \text{ days}$

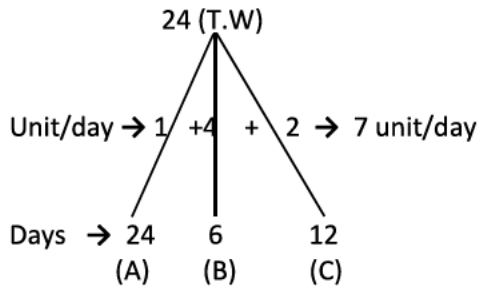
4. (a) If A does a work in 18 days.

ATQ,  
 B does same work in 9 day.



$= \frac{3}{18} = \frac{1}{6} \text{ part}$

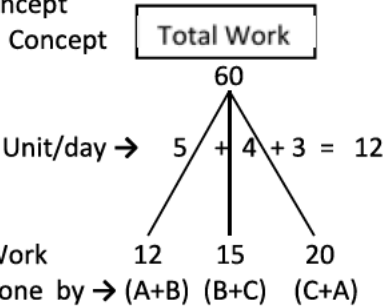
5. (c)



$$A + B + C = \frac{24}{7}$$

$$= 3\frac{3}{7} \text{ days}$$

6. (c) Concept



Description:

In these kind of Question, always take total work [T.W] as L.C.M. of no of days. Here T.W is 60.  
 If A+B complete the whole work in 12 days, so their one day work will be 5 unit.  
 Similarly we will calculate the one day work for other two pair.  
 (Here, 12 unit represents twice of the work done by A,B and C. So we will divide it by 2)

$$\text{Work done by (A+B+C)/day} = \frac{12}{2}$$

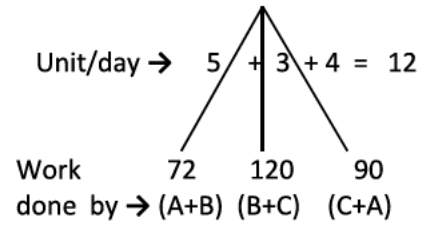
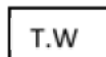
$$= 6 \text{ units/day}$$

∴ Total time taken by (A+B+C)

$$= \frac{\text{Total work}}{\text{T.W done by (A + B + C)/day}}$$

$$= \frac{60}{6} = 10 \text{ days}$$

7. (c)

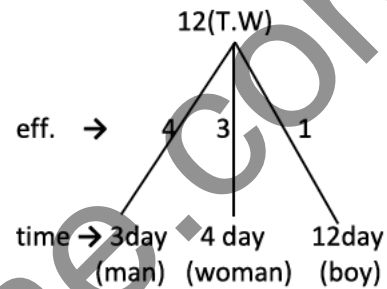


[Like Q : 1]

Work done by (A+B+C) per day = 6 units/day

$$\text{Total time taken by (A+B+C)} = \frac{360}{6} = 60 \text{ days}$$

8. (d)



If they have to complete the 12 units work in  $\frac{1}{4}$  of day.

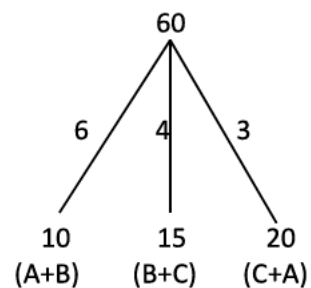
So it mean their combined efficiency should be 48 units/day.

(1 man + 1 woman)'s efficiency = 4 + 3 = 7 units

Unit left = 48 - 7 = 41 units

$$\text{Now No of boys required} = \frac{\text{T.W}}{\text{eff of a boy}} = \frac{41}{1} = 41 \text{ boys}$$

9. (b)



A+B+C work  $\frac{13}{2}$  units/day

A+B work 6 unit/day

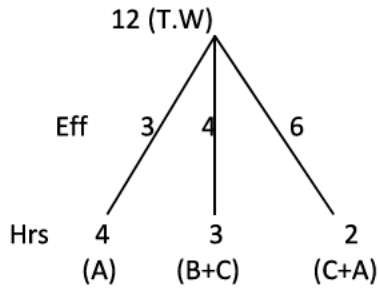
C work/day = [(A+B+C) - (A+B)]

$$= \frac{13}{2} - \frac{6}{1} = \frac{1}{2} \text{ unit/day}$$

C will finish in  $\frac{60}{\frac{1}{2}} = 120 \text{ days}$



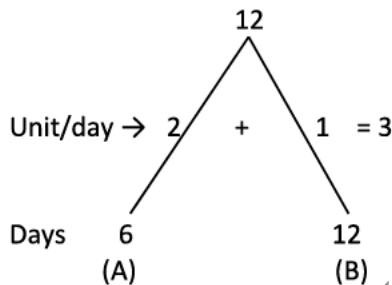
10. (b)



If (A+C)'s one day work = 6 units  
 And A's one day work = 3 units then  
 C's one day work = 6 - 3 = 3 units.  
 (B+C)'s one day work = 4 units  
 then B's one day work = 1 unit  
 B can complete the whole work in

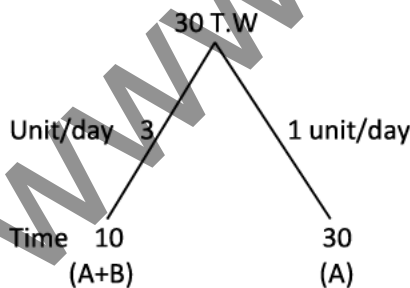
$$\frac{T.W}{\text{eff of B}} = \frac{12}{1} = 12 \text{ hrs}$$

11. (b) ATQ,



Work done by A+B per day (A+B)=3 units  
 Work done by A/day = 2  
 So,  
 The portion of the work done by A =  $\frac{2}{3}$

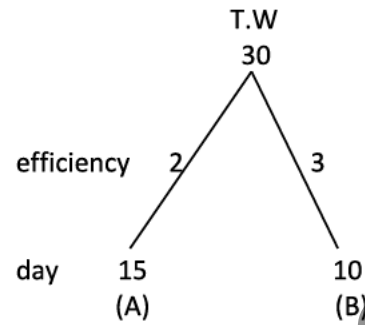
12. (c)



A + B - A = B's efficiency  
 3 - 1 = B's efficiency  
 2 = B's efficiency  
 B alone does in =  $\frac{30}{2}$   
 = 15 days

13.

(d)



If A and B worked till last with same efficiency. Then their profit/wages will divided in the ratio of efficiency.

$$\Rightarrow A : B = 2 : 3$$

$\times 6000$

$\times 6000$

$12000$        $30,000$

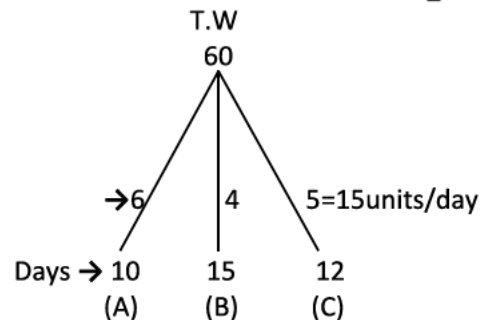
14. (d)

A can do  $\frac{1}{2}$  of a piece of work in 5 days  
 A can do 1 unit of work in

$$5 \times \frac{2}{1} = 10 \text{ days}$$

Similarly B complete 1 unit of work in  $\frac{9 \times 5}{3} = 15 \text{ days}$

C complete 1 unit of work in  $= 8 \times \frac{3}{2} = 12 \text{ days}$



=A+B+C one day work = 15 unit  
 $\Rightarrow$  They will complete the whole work in  $\frac{60}{15} = 4 \text{ days}$

15. (a) A man and a boy get Rs. 800 for 5 days

A man and a boy get Rs  $\frac{800}{5} = 160$  for 1 day

If man is twice efficient than boy. So their

efficiency will be in ratio of 2 : 1 (M : B)

$$\frac{1}{3} \times 160 = Rs. 53 \frac{1}{3}$$

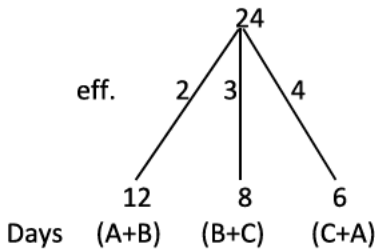
16. (b) Try to solve these kind of question by option  
Because of his being absent he was paid Rs. 750 less Now check with option, Since max. possible daily wages is asked so it will be 250

Or

It is required to find the highest common factor (HCF)

$$\begin{array}{r} 5000 \overline{) 5750} \ 1 \\ \underline{5000} \\ 750 \end{array} \begin{array}{r} 5000 \overline{) 5000} \ 6 \\ \underline{4500} \\ 500 \end{array} \begin{array}{r} 500 \overline{) 750} \ 1 \\ \underline{500} \\ 250 \end{array} \begin{array}{r} 500 \overline{) 500} \ 2 \\ \underline{500} \\ x \end{array}$$

17. (d)



$$2(A+B+C) = 9 \text{ units/day}$$

$$A + B + C = \frac{9 \text{ units}}{2 \text{ day}}$$

$$(C+A) = 4 \text{ unit/day}$$

$$B's \text{ one day work} = \frac{9}{2} - \frac{4}{1}$$

$$= \frac{1}{2} \text{ unit/day}$$

18. (a) Let total work be 50 units

$$\frac{4}{5} \times \text{any multiple of 5}$$

$$A \text{ does } \frac{4}{5} \text{ th of work} \rightarrow \frac{4}{5} \times 50$$

$$= 40 \text{ units in 20 days}$$

So,

A's 3 days work

$$= 2 \text{ units/day} \times 3 \text{ days}$$

$$= 6 \text{ units}$$

$$\therefore \text{Left work} = 10 - 6 = 4 \text{ units}$$

So,

$$B's \text{ work per day} = \frac{4}{3}$$

$$B's \text{ will do whole work} = \frac{50}{\frac{4}{3}} = 37 \frac{1}{2} \text{ days}$$

- 19.

(c) Let total work be 1 unit

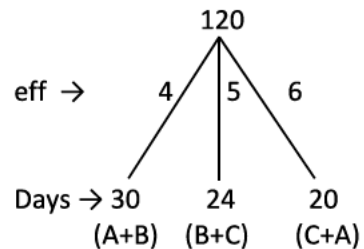
A and B completes  $1 - \frac{7}{10} = \frac{3}{10}$  of work in 4 days.

They will complete the whole work in

$$\frac{3}{10} \text{ work in 4 days}$$

$$1 \text{ work in } \frac{4 \times 10}{3} = 13 \frac{1}{3} \text{ days}$$

20. (c)



$$= 2(A+B+C) = 15$$

$$(A+B+C) = \frac{15}{2} \text{ units/day}$$

$$(A+B+C)'s \ 10 \text{ days work} = \frac{15}{2} \times 10 = 75 \text{ units}$$

$$\text{Work left } 120 - 75 = 45 \text{ units}$$

Now A will do remaining work in

A's work ->

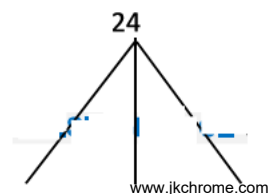
$$(A + B + C) - (B + C) \Rightarrow \frac{15}{2}$$

$$- 5 \Rightarrow \frac{5}{2} \text{ units/day}$$

$$A \text{ will complete} = \frac{T.W}{\text{unit/day}}$$

$$= \frac{45}{5} \times 2 = 18 \text{ days}$$

21. (c)



Unit/day → 3 2 6

Days → 8 12 4  
(A) (B) (A+B+C)

Efficiency of C

$$= A + B + C - A - B$$

$$= 6 - 3 - 2 = 1 \text{ unit/day}$$

efficiency of B = 2 units

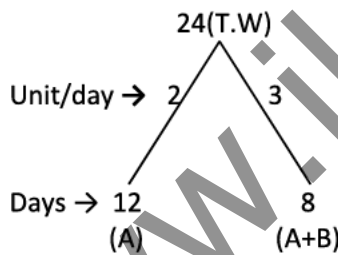
efficiency of A = 3 units

Share/profit of C =

$$\frac{\text{eff. of C}}{\text{Total eff.}} \times \text{Total amount}$$

$$= \frac{1}{6} \times 4500 = \text{Rs. } 750$$

22. (a)

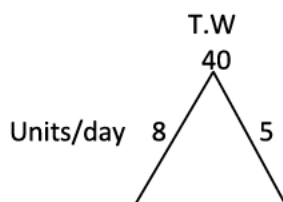


(A+B) one day work is 3 units  
A one day work is 2 units  
B's one day work = 3 - 2 = 1 unit/day  
B will complete the whole work in

$$\frac{\text{T.W}}{\text{Unit done per day}}$$

$$= \frac{24}{1} = 24 \text{ days}$$

23. (c)



Days 5 8  
(A+B) (A)

(A+B)'s one day work = 8 units

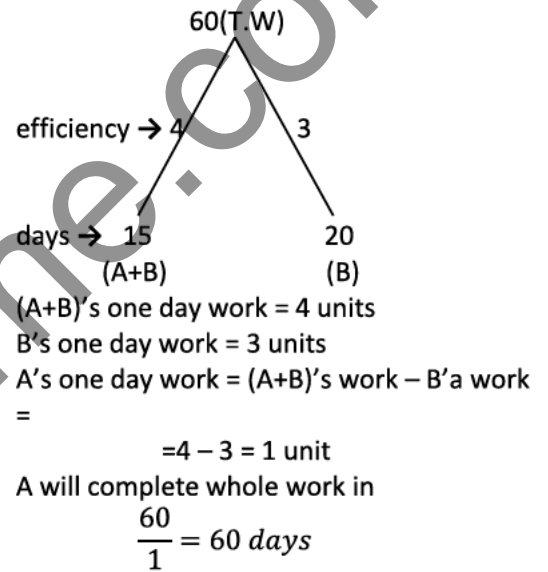
A's one day work = 5 units

So, B's one day work = 8 - 5 = 3 units

B alone can do the whole work in

$$\frac{\text{T.W}}{\text{units/days}} = \frac{40}{3} = 13\frac{1}{3} \text{ days}$$

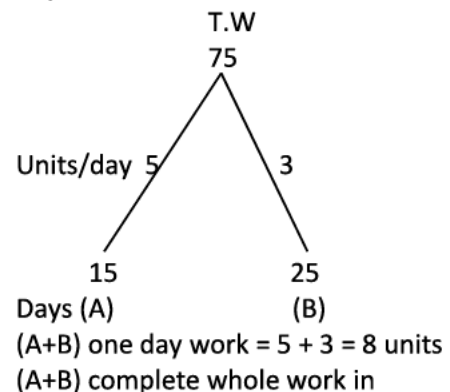
24. (a)



25. (b)

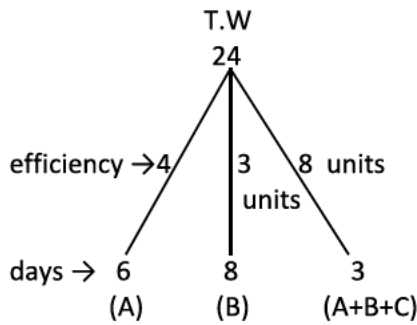
A completes  $\frac{1}{3}$  unit of work in 5 days  
A completes 1 unit of work in  $\frac{5}{1} \times 3 = 15 \text{ days}$

B completes  $\frac{2}{5}$  unit of work in 10 days  
B completes 1 unit of work in  $\frac{10}{2} \times 5 = 25 \text{ days}$

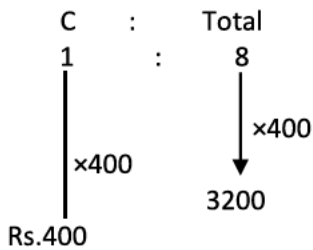


$$= \frac{75}{8} = 9\frac{3}{8} \text{ days}$$

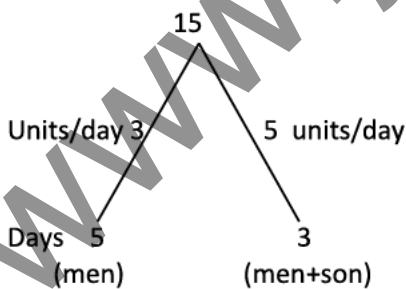
26. (b)



C's efficiency is (A+B+C)'s efficiency  
 (A+B)'s efficiency  $8 - 7 = 1$  unit/day  
 So, C's share will be in ratio

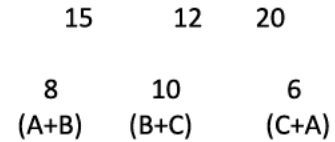
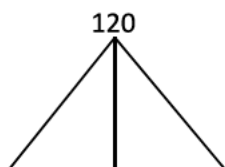


27. (c)



Son's efficiency =  $5 - 3 = 2$  units/day  
 Son will do in  $\frac{15}{2} = 7.5$  days

28. (c)



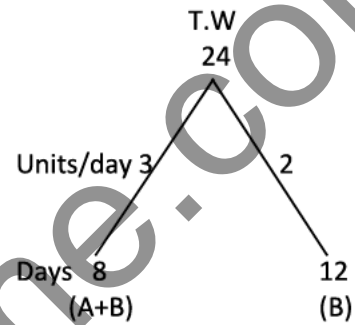
eff. of :  $2(A+B+C) = 47$

$$A + B + C = \frac{47}{2}$$

(A+B+C) will complete the whole work in

$$\frac{120}{\frac{47}{2}} = \frac{240}{47} = 5\frac{5}{47} \text{ days.}$$

29. (c)



B's one day work = 2 units/days

A's one day work =  $3 - 2 = 1$  unit/day

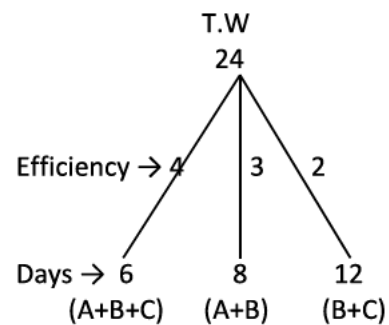
4 days work of 'B' =  $4 \times 2$  units/day  
 = 8 units

Work left =  $24 - 8 = 16$  units

A will complete the remaining work in

$$\frac{16 \text{ units}}{1 \text{ unit/day}} = 16 \text{ days}$$

30. (a)



A's one day work =  $4 - 2 = 2$  units.

B's one day work =  $3 - 2 = 1$  unit

C's one day work =  $2 - 1 = 1$  unit

A and C complete the whole work in

$$\frac{T.W}{\text{eff. of } A + B} = \frac{24}{2 + 1} = 8 \text{ days}$$

31. (b)

T.W

36

Unit/day → 2      4      3

18      9      12

Days → (A+B)      (B+C)      (A+C)

$\Rightarrow 2(A+B+C) = 9 \text{ units/day}$

$A + B + C = \frac{9 \text{ units}}{2 \text{ day}}$

A+C = 3 units/day

B's one day work is

$\Rightarrow \frac{9}{2} - \frac{3}{1} = \frac{9-6}{2} = \frac{3}{2} \text{ units/day}$

$\Rightarrow B \text{ completes the whole work in } = \frac{36}{\frac{3}{2}}$

$\Rightarrow 24 \text{ days}$

32. (b) A completes  $\frac{2}{3}$  units in 8 days
- A completes 1 unit in  $8 \times \frac{3}{2} = 12 \text{ days}$
- B completes  $\frac{3}{5}$  unit of work in 6 days
- B completes 1 unit of work in  $6 \times \frac{5}{3} = 10 \text{ days}$

60

Units/day 5      6 units/day

12 days (A)      10 days (B)

A and B will complete the whole work in (T.W)

$\frac{60}{(\text{efficiency of } A + B)} = \frac{60}{6 + 5}$

$= 5 \frac{5}{11} \text{ days}$

33. (c) P completes  $\frac{1}{4}$  of work in 10 days
- P completes full of work in  $\frac{10}{\frac{1}{4}} \times 4 = 40 \text{ days}$
- Q completes 40% of work in 145 days
- Q completes full 100% of work in
- $= \frac{145}{40} \times 100 = 362.5 \text{ days}$
- R completes  $\frac{1}{3}$  of work in - 13 days

R completes full of work in  $\frac{13}{1} \times 3 = 39 \text{ days}$

S completes  $\frac{1}{6}$  of work in 7 days

S completes full of work in  $\frac{7}{1} \times 6 = 42 \text{ days}$

Clearly, we can see R completes the work first.

34. (c)

T.W 60

efficiency → 6      5      4

10      12      15

days → (A)      (B)      (C)

A+B+C one day work is (6+5+4)=15 units.

(A+B+C) can do the whole work in

$= \frac{60}{15} = 4 \text{ days}$

35. (a)

T.W 60

efficiency 5      2

12      30

days → (A+B)      (B)

(A+B)'s, one day work is 5 units

B's one day work is 2 units

So, A one day work is = 5 - 2 = 3 units

A will complete the whole work in

$= \frac{60}{3} = 20 \text{ days}$

36. (c)

T.W 72

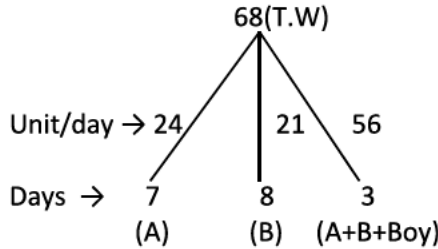
efficiency → 6      3      2

12      24      36

days → (A)      (B)      (C)

A + B + C = 11 units/day  
 A+B+C do whole work in  
 $\frac{72}{11} = 6\frac{6}{11}$  days

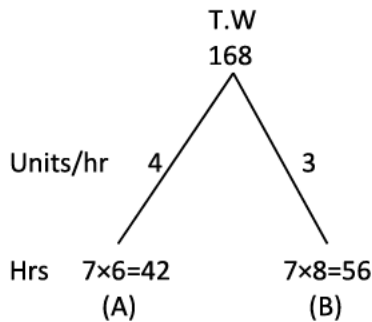
37. (c)



Boy's efficiency = Total eff. – eff. of A+B  
 = 56 – (24+21)  
 = 11

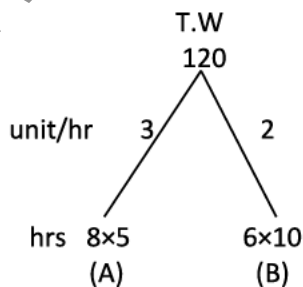
For 56 units (A+B+Boy) get Rs. 1400  
 $\therefore$  1 units (A+B+Boy) = Rs. 25  
 Boy get 11 units = 25×11=Rs. 275

38. (a)



A+B one hour work = 7 unit  
 $\Rightarrow$  (A+B)'s 8 hours work = 8 × 7 = 56 units/day  
 (A+B) complete the whole work in =  $\frac{168}{56} = 3$  days

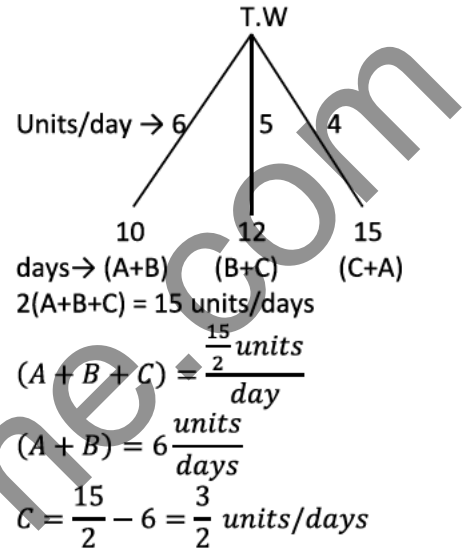
39. (a)



A and B do 5 units/hour so they will do 5×8=40 units in 8 hours or a day. And the whole work will be complete in

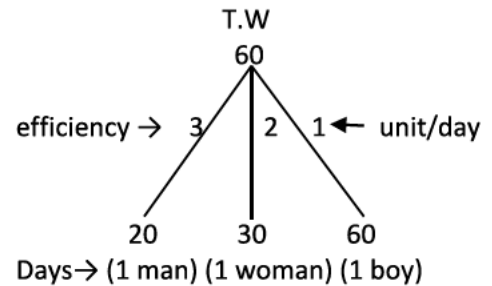
$\frac{T.W}{40 \text{ units/day}} = \frac{120}{40} \Rightarrow 3 \text{ days}$

40. (c)



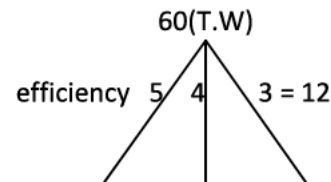
C will complete the work in =  $\frac{60}{1.5} = 40$  days

41. (a)



(2 men and 8 women)'s one day work is  
 = [(2×3)-(8×2)]  
 = 6 + 16 = 22 units  
 In 2 days (2 men + 8 women) will do = 44 units  
 Remaining work 60 – 44 = 16 units will be complete by boys in 2 days.  
 So, 8 units of work will be done by boys in 1 day and one boy does one units/ days. so 8 boys are required to do 8 units.  
 = 8 boys

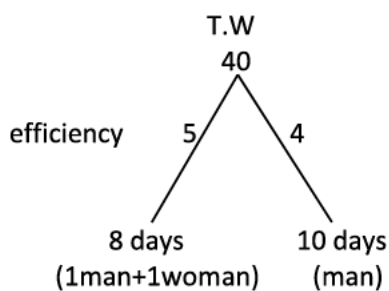
42. (d)



days 12      15      20  
 (A+B)    (B+C)    (C+A)

2 (A+B+C) = 12 units/day  
 A+B+C = 6 units/day  
 (A+C) complete 3 units/day  
 B's one day work = 3 units.  
 B will complete whole work in  
 $= \frac{60}{3} = 20 \text{ days}$

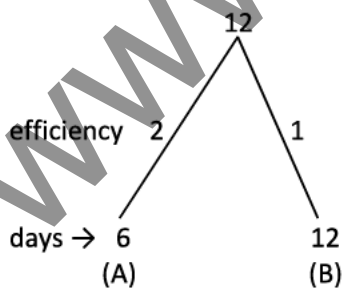
43. (c)



(M+W) one day work = 5 units  
 M's one day work = 4 units  
 So,  
 Woman's one day work = 5 - 4 = 1 unit

Woman will complete in =  $\frac{40}{1} = 40 \text{ days}$

44. (d)



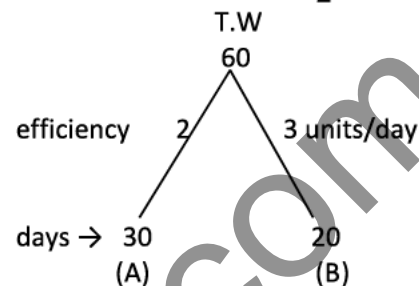
A+B can complete the whole work in  
 $\frac{T.W}{\text{efficiency of A and B}} = \frac{12}{2+1} = 4 \text{ days}$

45. (a) A can do  $\frac{1}{6}$  of work in 5 days

A can do 1 of work in  $\frac{5}{1} \times 6 = 30 \text{ days}$

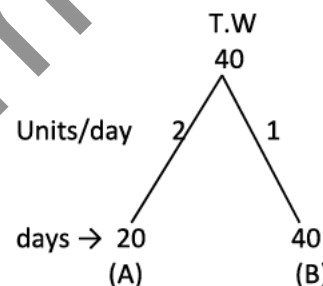
B can do  $\frac{2}{5}$  of work in 8 days

B can do 1 of work in  $8 \times \frac{5}{2} = 20 \text{ days}$



A and B will complete the whole work in  
 $= \frac{60}{(2+3)} = 12 \text{ days}$

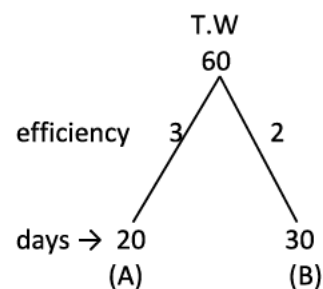
46. (a)



(A+B's) one day work is (2+1) units  
 (A+B)'s 5 day work is 3x5 = 15 units  
 Work left = 40 - 15 = 25  
 fraction of work left

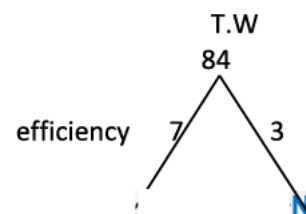
$$= \frac{\text{work left}}{\text{total work}} = \frac{25}{40} = \frac{5}{8}$$

47. (d)



(A+B) can do the whole work together in  
 $= \frac{60}{3+2} = 12 \text{ days}$

48. (b)

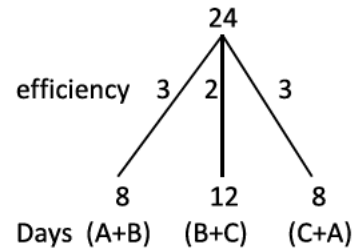


days  $\rightarrow$  12 (A+B)      28 (A)

B's efficiency = (A+B)-A  
 = 7 - 3 = 4 units/day

B can dig it alone in  

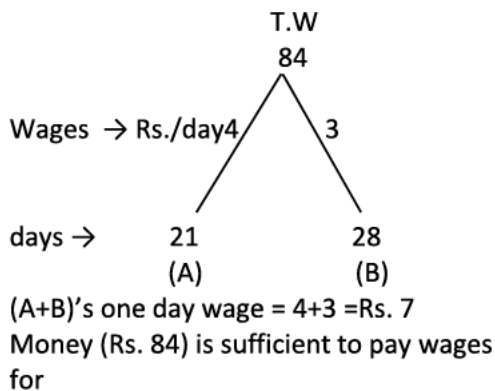
$$\frac{T.W}{\text{efficiency of B}} = \frac{84}{4} = 21 \text{ days}$$



= 2(A+B+C) = 8 units/day  
 A+B+C = 4 units/day  
 (A+B+C) will complete whole work in  

$$= \frac{24}{4} = 6 \text{ days}$$

49. (d)



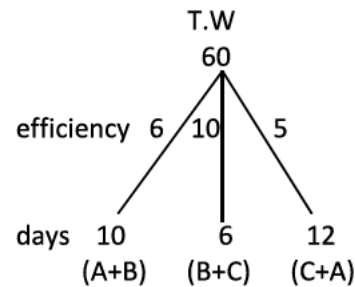
(A+B)'s one day wage = 4+3 = Rs. 7  
 Money (Rs. 84) is sufficient to pay wages for  

$$\Rightarrow \frac{84}{(4+3)} \frac{\text{(total money)}}{\text{one day wages}} = 12 \text{ days}$$

53. (c)

50. (b)

(A+B+C)'s one day earning = Rs. 150  
 (A+C)'s one day earning = Rs. 94  
 B's one day earning = (A+B+C)-(A+C)  
 = 150-94 = Rs. 56  
 (B+C)'s one day earning = Rs. 76  
 C's one day earning = 76 - 56 = Rs. 20

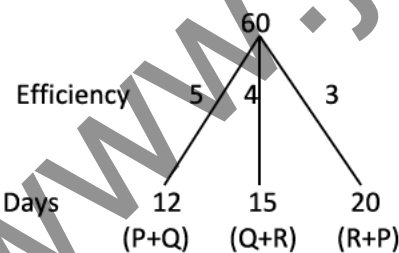


2(A+B+C) = 21 units/day  

$$A + B + C = \frac{21}{2} \text{ units/day}$$
  
 (A+B+C) will complete whole work in  

$$\Rightarrow \frac{60}{\frac{21}{2}} = 5\frac{5}{7} \text{ days}$$

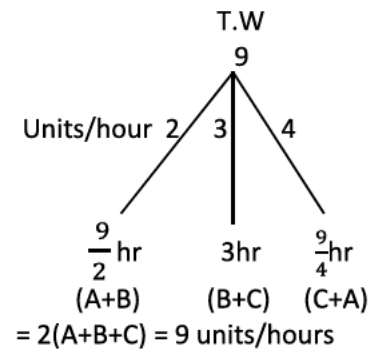
51. (c)



= 2(P+Q+R) = 12 units  
 P+Q+R = 6 units  
 Q+R = 4 units  
 P = 6 - 4 = 2 units/day

P alone will complete in =  $\frac{60}{2} = 30 \text{ days}$

54. (b)



= 2(A+B+C) = 9 units/hours

52. (c)

T.W

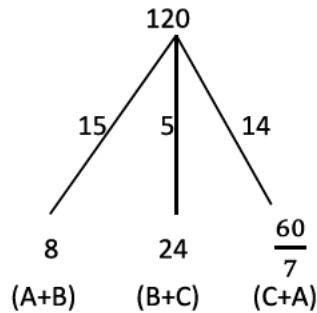


$$A + B + C = \frac{9}{2} \text{ units/hours}$$

(A+B+C) will complete whole work in

$$\frac{T.W}{\text{units/day}} \quad \frac{9}{\frac{9}{2}} = 2 \text{ hours}$$

55. (a)



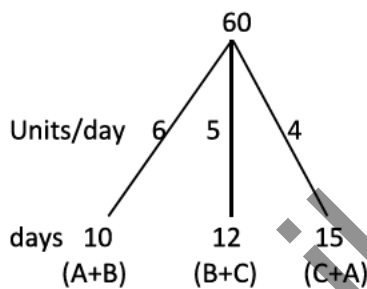
efficiency  
 $2(A+B+C) = 34 \text{ units/day}$   
 $(A+B+C) = 17 \text{ units/day}$   
 $A+B = 15 \text{ units/day}$

So,

$C = 17 - 15 = 2 \text{ units/day}$   
 C will complete the whole work in

$$\frac{120}{2} = 60 \text{ days}$$

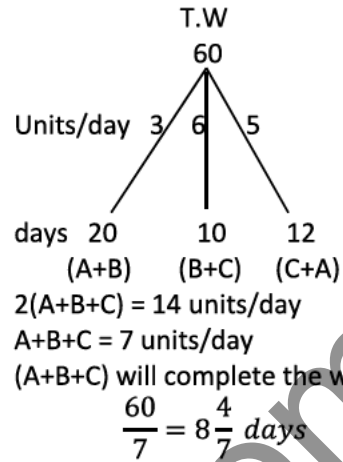
56. (a)



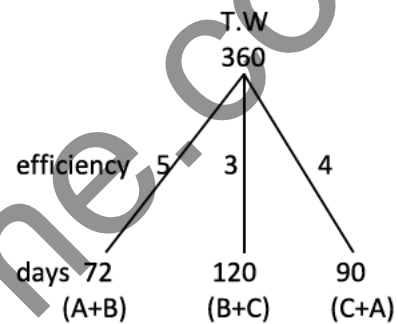
$2(A+B+C) = 15 \text{ units/day}$   
 $A + B + C = \frac{15}{2} \text{ units/day}$   
 $B + C = 5 \text{ units/day}$   
 A's one day work.  
 $(A+B+C) - (B+C)$  one day of work  
 $\frac{15}{2} - 5 = \frac{5}{2} \text{ units/day}$   
 A will complete whole work in =

$$= \frac{60}{\frac{5}{2}} = 24 \text{ days}$$

57. (c)



58. (c)



$2(A+B+C) = 12 \text{ units/day}$   
 $(A+B+C) = 6 \text{ units/day}$   
 In 3 days.  
 $A+B+C$  will do =  $6 \times 3 = 18 \text{ units}$   
 In 3 days the part of work will finish in =

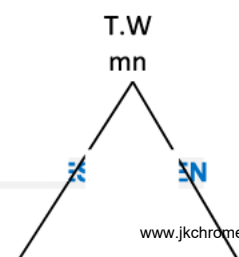
$$\frac{3 \text{ days work}}{T.W} = \frac{18}{360} = \frac{1}{20}$$

59. (d)

	Skilled	half skilled	unskilled
efficiency	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{6}$
efficiency	4	3	2

Skilled half skilled unskilled  
 No. of days worked =  
                   7          8          10  
 Work done =  $(7 \times 4) + (8 \times 3) + (10 \times 2)$   
                   = 72  
 Trained labor get :  $\frac{28}{72} \times 369 = 143.50$

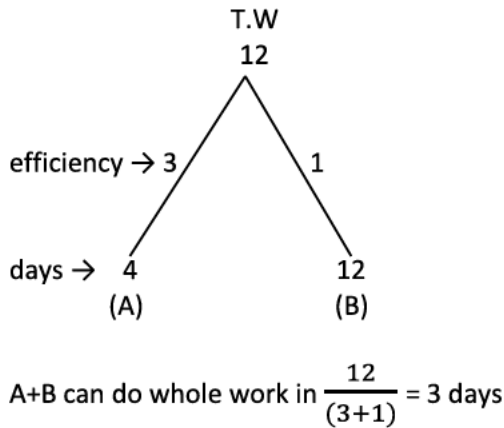
60. (d)



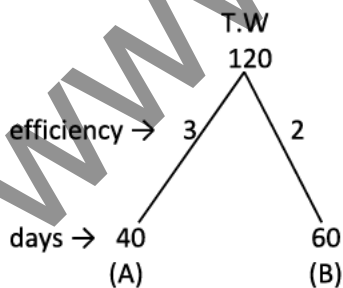
efficiency  $\rightarrow$  n m  
 days  $\rightarrow$  m n  
 (A) (B)  
 efficiency of A and B =  $m + n$   
 (A+B) completes the work in  

$$\frac{T.W}{\text{efficiency } (A + B)} = \frac{mn}{m + n}$$

61. (d)



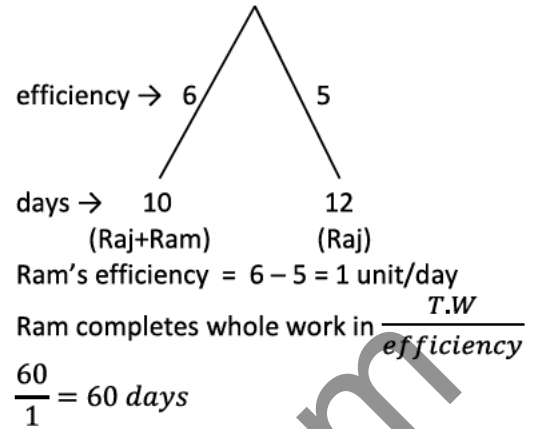
62. (c) A can do  $\frac{1}{4}$  units of work in 10 days  
 A can do 1 unit of work in  $\frac{10}{\frac{1}{4}} = 40$  days  
 B can do  $\frac{1}{3}$  unit of work in 20 days  
 B can do 1 unit of work in  $\frac{20 \times 3}{1} = 60$  days



A+B can do whole work in  $\frac{120}{3 + 2} = 24$  days

63. (d)

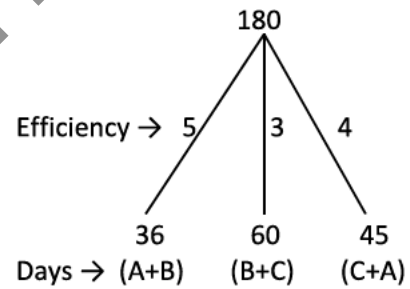
T.W  
60



64. (b)

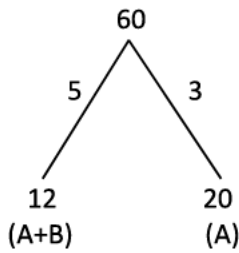
According to question,  
 If the total work is 23 units A and C completed 19 units together it means  $23 - 19 = 4$  units is completed by B  
 So amount paid to B is  $= \frac{4}{23} \times 575 = \text{Rs.}100$

65. (b)



$2(A+B+C) = 12$  units/day  
 $A+B+C = 6$  units/day  
 $A+B = 5$  units/day  
 So,  
 $C = 6 - 5 = 1$  unit/day  
 and C will complete the whole work in  $\frac{180}{1} = 180$  days

66. (d)

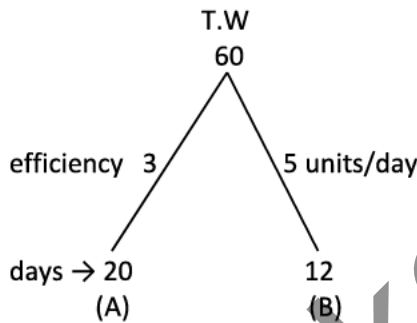


(A+B)'s one day work = 5 units.  
 A's one day work = 3 units  
 B's one day work = 2 units  
 B's half day work = 1 units  
 Now,  
 (A+B)'s work/day = 3 + 1 = 4 unit

$$\text{Work done by (A+B) in} = \frac{60}{4}$$

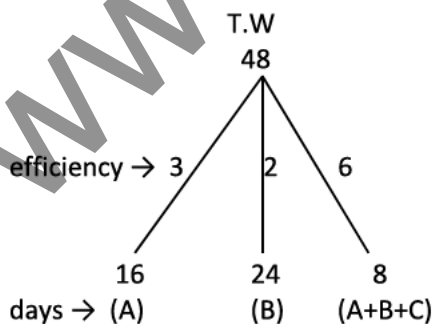
$$= 15 \text{ days}$$

67. (a) According to question,



9 days work of B is  $9 \times 5$  units = 45 units  
 Work left =  $60 - 45 = 15$  units  
 Now, A will finish remaining work in  $\frac{15}{3} = 5$  days

68. (c)



C's one day work or efficiency is  $6 - 3 - 2 = 1$  unit  
 As we know wages/rupees/profit always

divided in ratio of efficiency / ratio of part of work done to total work.

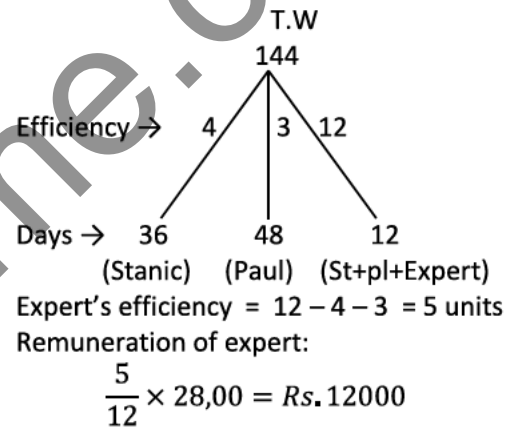
Here,

$$\begin{matrix} A+B+C : C \\ \times 160 \quad \downarrow \quad \times 160 \\ \text{Rs. 960} \quad \text{Rs. 160} \end{matrix}$$

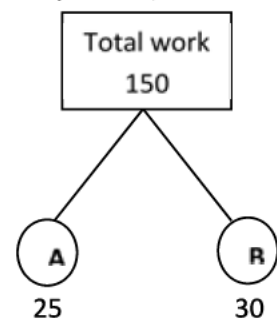
69. (a)

	Earlier :	Now
No of worker	15	11
Wages	<u>22</u>	<u>25</u>
Total wages	<u>330</u>	<u>275</u>
Total wages	6	5

70. (d)



71. (d) According to the question,



$\therefore$  A does 6 units in 1 day  
 B does 5 units in 1 day  
 $\therefore$  Total work of (A+B) in 1 days = 11 units  
 In 5 days (A+B) work =  $11 \times 5 = 55$  units  
 $\therefore$  Work left =  $150 - 55 = 95$  units

$$\therefore \text{Ratio} = \frac{95}{150} = \frac{19}{30}$$

72. (c)  $x = 4\text{hr}$   
 $y = 8\text{hr}$   
 $x + y = \frac{8}{3}h = 160 \text{ minutes}$

73. (c)  $X = \frac{1}{4}w = 6D = 24D$   
 $X = \frac{1}{4}w = 6D = 24D$   
 $(x + y) = \frac{48}{5} = 9\frac{3}{5} \text{ days}$

74. (a) Efficiency  
 Total work 120  
 A ⇒ 24 days → 5  
 B ⇒ 5 days → 5  
 C ⇒ 12 days → 5  
 A + B + C → 39  
 $\text{No. of days} = \frac{\text{Total work}}{\text{Efficiency}} = \frac{120}{39} = 3\frac{1}{13} \text{ days}$

75. (d) Janardan completes  $\frac{2}{3}$  of work in 10 days  
 Janardan complete 1 of work in =  $\frac{10 \times 3}{2} = 15$  days  
 Janardan completes  $\frac{3}{5}$  of work in =  $15 \times \frac{3}{5} = 9$  days

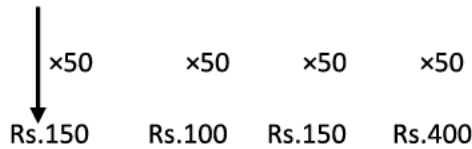
76. (a) T.W 48  
 efficiency → 4 5 12  
 days → 15 12 5  
 (A) (B) (A+B+C)  
 C's efficiency = 12 - 5 - 4 = 3  
 C's share :  $\frac{3}{12} \times 1200 = \text{Rs. } 300$

77. (d) 60  
 efficiency → 5 4 12  
 days → 12 15 5  
 (A) (B) (A+B+C)

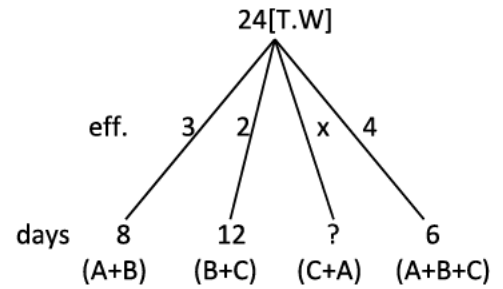
Now, (A+B+C) : A  
 $\frac{12}{5} \times 80 = \text{Rs. } 960$   
 $\frac{5}{12} \times 80 = \text{Rs. } 400$

78. (c) (T.W) 48  
 efficiency 6 4 3 16  
 days → 8 12 16 3  
 (I<sup>st</sup>) (II<sup>nd</sup>) (III<sup>rd</sup>) (I+II+III+IV)  
 ⇒ IV<sup>th</sup> person efficiency = 16 - 6 - 4 - 3 = 3 units  
 16 units → 1200  
 1 unit → 75  
 3 units → Rs. 225

79. (a) T.W 48  
 Efficiency → 3 2 8  
 Days → 16 24 6  
 (A) (B) (A+B+C)  
 C's efficiency = 8 - 3 - 2 = 3 units  
 A:B:C Total  
 3 : 2 : 3 = 8

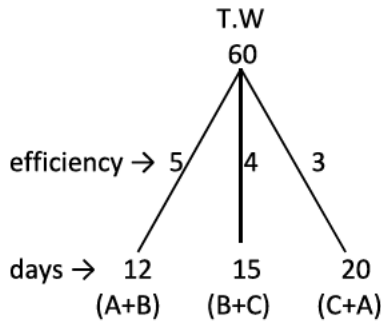


82. (b)



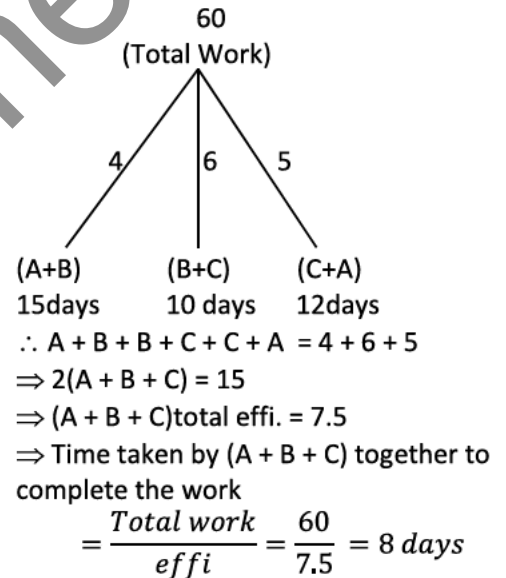
Let efficiency of (C+A) is 'x' unit per day  
 A+B+C one day work = 4 units  
 2 (A+B+C) one day work = 8 units  
 One day work of (A+B)+(B+C)+(C+A)=  
 2(A+B+C)  
 $3 + 2 + x = 8, x = 3$  units/day  
 $Total\ days = \frac{T.W}{eff.} \Rightarrow \frac{24}{3} = 8\ days$

80. (b)

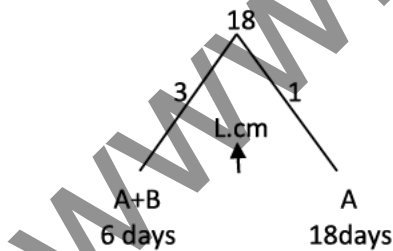


Efficiency of 2(A+B+C) = 12 units/day  
 (A+B+C) = 6 units/day  
 A's efficiency  
 = (A+B+C)'s - (B+C)efficiency  
 = 6 - 4  
 A's efficiency = 2 units/day  
 A can complete the whole work in  
 $\frac{T.W}{efficiency}$   
 $= \frac{60}{2} = 30\ days$

83. (a)

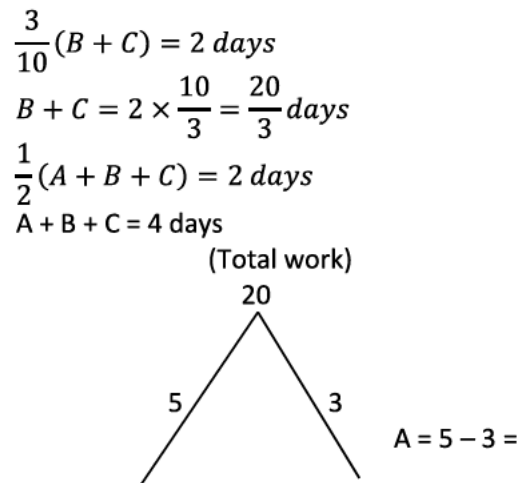


81. (b) Let total work efficiency



∴ efficiencies of A+B = 3  
 efficiency of A = 1  
 then b's = 3 - 1 = 2  
 ∴ time, taken by B to finish the work =  
 $\frac{Total\ work}{efficiency}$   
 $= \frac{18}{2} = 9\ days$

84. (b)

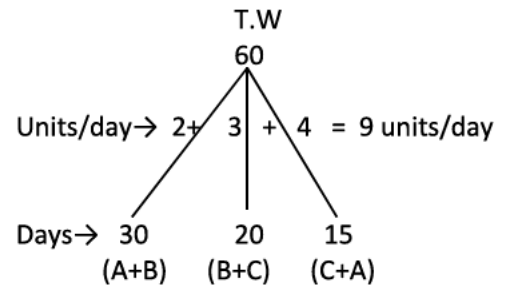


2

$$\frac{4}{A+B+C} = \frac{\frac{20}{3}}{B+C}$$

A alone will complete the work =  $\frac{20}{2}$  days = 10 days

87. (d)



$$2(A + B + C = 9)$$

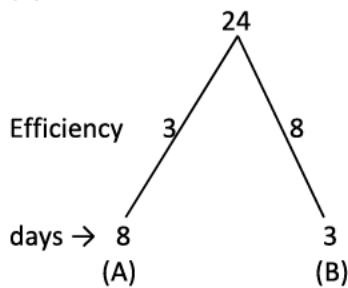
$$\text{Efficiency of } A + B + C = \frac{9}{2}$$

Work done by A, B and C together

$$= \frac{60}{\frac{9}{2}} = \frac{120}{9} = \frac{40}{3} = 13\frac{1}{3} \text{ days}$$

85.

(b)

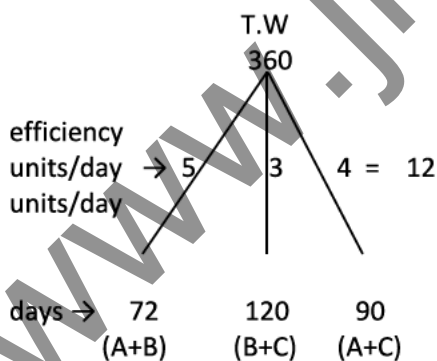


A construct in 6 day  
 $6 \times 3 = 18$  units construct  
 Now work left after destroying by B =  $18 - 16 = 2$  units  
 Now A will do  $24 - 2 = 22$  units  
 A completes in =  $\frac{22}{3} = 7\frac{1}{3}$  days

88. (d) Since we know efficiency and time are inversely proportion to each other.

	P	:	Q
efficiency	3	:	4
time	4	:	3

86. (c)



$2(A+B+C) = 12$  units/days  
 $(A+B+C) = 6$  units/days  
 $(B+C)$  one day work is 3 unit  
 A's one day work is =  $6$  units -  $3$  units =  $3$  units/days  
 A will do whole work in =  $\frac{360}{3} = 120$  days

89. (b)  $(6m + 48b) \times 10$  days  
 $= (26m + 48b) \times 2$  days

$$\left[ \frac{m_1 t_1 d_1}{w_1} = \frac{m_2 t_2 d_2}{w_2} \right]$$

$$30m + 40b = 26m + 48b$$

$$4m = 8b$$

$$m = 2b$$

$$\frac{m}{b} = \frac{2}{1}$$

1m (work) = 2 units/day  
1b (work) = 1 units/day  
Hence,  
Total work  
=  $(6 \times 2 + 8 \times 1) \times 10$   
= 200 units  
Required time  
(15m + 20b)  
=  $\frac{200}{(15 \times 2 + 20 \times 1)} = \frac{200}{50} = 4 \text{ days}$

90. (b)  $5M \times 6 \text{ days} = 10W \times 5 \text{ days}$

$$\frac{M}{W} = \frac{5}{3}$$

1M (work) = 5 units/day  
1W (work) = 3 units/day  
Hence,  
Total work =  $(5M \times 6) = 5 \times 5 \times 6 = 150$  units  
Required time for  $(5W + 3M)$   
=  $\frac{\text{Total work}}{\text{Work done/day}}$   
=  $\frac{150}{(5 \times 3 + 3 \times 5)} = \frac{150}{30} = 5 \text{ days}$

91. (a)

$$\left[ \frac{m_1 t_1 d_1}{w_1} = \frac{m_2 t_2 d_2}{w_2} \right]$$

$$\frac{10M \times 20 \text{ days}}{260 \text{ Mats}} = \frac{20B \times 20 \text{ days}}{260 \text{ mats}}$$

$$10M = 20B$$

$$1M = 2B$$

$$\therefore \frac{M}{B} = \frac{2}{1}$$

$$\therefore 1M \text{ work} = 2 \text{ units/day}$$

$$1B \text{ work} = 1 \text{ unit/day}$$

Mats made by  $(8M + 4B)$  in 20 days

$$\frac{10M \times 20 \text{ days}}{260 \text{ Mats}} = \frac{(8M + 4B) \times 20 \text{ days}}{x \text{ mats}}$$

$$\frac{10 \times 2 \times 20 \text{ days}}{260m} = \frac{20 \times 20 \text{ days}}{x m}$$

After solving,  
 $x = 260$  mats

92. (c) ATQ  
 $3m \times 16 = 6w \times 16$

$$\frac{m}{w} = \frac{2 \rightarrow \text{efficiency of man}}{1 \rightarrow \text{efficiency of woman}}$$

Total work =  $3 \times 2 \times 16 = 96$  units

One day work of  $(12m + 8w) = 12 \times 2 + 8 \times 1 = 32$  units

Total time taken by  $(12m + 8w) = \frac{96}{32} = 3$  days

93. (d) If no of day at work is same. So we can equate directly

16 men = 20 women

4 men = 5 women

5 women = 4 men

1 women =  $\frac{4}{5}$  men

15 women =  $\frac{4}{5} \times 15$

15 women = 12 men

$\Rightarrow$  16 men complete a work in 25 days

1 men complete a work in = 400 days

28 men + 15 women = ?

28 men + 12 men = 40 men work in

$\frac{25 \times 16}{40} = 10 \text{ days}$

Alternate:-

16M or 20W  $\longrightarrow$  25 days

28M and 15W  $\longrightarrow$  ?

$\frac{16 \times 20 \times 25}{(16 \times 15) + (20 \times 28)} = 10 \text{ days}$

94. (c) According to the question

5 men = 8 women

If 8 women is equal to 5 men

Then 4 women is equal to =  $\frac{5}{2}$  men

$2 \text{ men} + 4 \text{ women} = 2m + \frac{5}{2}m = \frac{9}{2}m$

Now,

5 men completes the work in 12 days

1 men completes the work in =  $12 \times 5$  days

$$\frac{9}{2} \text{ men completes the work in } = \frac{12 \times 5}{2}$$

$$= 13\frac{1}{3} \text{ days}$$

**Alternate**

$$5m \times 12 = 8w \times 12$$

$$\frac{m}{w} = \frac{8}{5} \rightarrow \text{efficiency of man}$$

$$\frac{m}{w} = \frac{5}{8} \rightarrow \text{efficiency of woman}$$

Total work =  $5 \times 8 \times 12 = 480$  units  
 One day work of  $(2m+4w)$   
 =  $2 \times 8 + 4 \times 5 = 36$  units

Total time taken by  $(2m+4w) = \frac{480}{36}$   
 =  $13\frac{1}{3}$  days

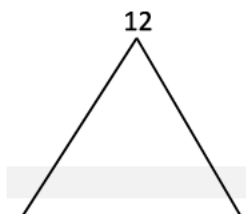
95.

(d) ATQ,  
 $3m \times 43 = 4w \times 43$   
 $\frac{m}{w} = \frac{4}{3} \rightarrow \text{efficiency of man}$   
 $\frac{m}{w} = \frac{3}{4} \rightarrow \text{efficiency of woman}$   
 Total work =  $3 \times 4 \times 43$  units  
 One day work of  $(7m+5w) = 7 \times 4 + 5 \times 3 = 43$  units  
 Total time taken by  $(7m + 5w)$   
 =  $\frac{3 \times 4 \times 43}{43} = 12$  days

96. (a)

$\Rightarrow$  efficiency of  $(14 \text{ men} + 20 \text{ women})$   
 =  $(14 \times 10) + (20 \times 7)$   
 =  $140 + 140$   
 =  $280$   
 Let 'D' days taken.  
 $\frac{(7 \times 10) \times 10}{100} = \frac{280 \times D}{600}$   
 $D = 15$

97. (c)



Unit/day	2	1
6 men		12 women
= $\frac{12 \times 20}{1 \text{ work}} = \frac{(16 + 16) \times \text{days}}{2 \text{ work}}$		
$12 \times 2 = \frac{32 \times \text{days}}{2}$		
days = 15 days		

98. (a) According to question,  
 $(2 \text{ men} + 1 \text{ women}) \times 14_{\text{days}}$   
 =  $(2 \text{ men} + 1 \text{ women}) \times 14_{\text{days}}$   
 $14 \text{ men} + 7 \text{ women} = 8 \text{ men} + 16 \text{ women}$   
 $6 \text{ men} = 9 \text{ women}$   
 $2 \text{ men} = 3 \text{ women}$   
 $1 \text{ man get} = \text{Rs. } 600/\text{days}$   
 $2 \text{ men get} = \text{Rs. } 1200/\text{days}$   
 (Wages always divided in the ratio of efficiency)  
 So,  
 $3 \text{ women will get} = \text{Rs. } 1200/\text{days}$  [2m = 3w]  
 $1 \text{ woman will get} = 400/\text{days}$
99. (b) Jyoti does  $\frac{3}{4}$  unit of work in 12 jyoti does 1 unit of work in

$$= 12 \times \frac{4}{3} = 16 \text{ days}$$

According to question

	Mala	:	Jyoti
efficiency $\rightarrow$	2	:	1
Time $\rightarrow$	1	:	2
	$\downarrow \times 8$		$\downarrow \times 8$
	8 days		16 days

100. (c) According to question

	A	:	B	:	C
efficiency $\rightarrow$	2	:	1	:	
			2	:	1
$\Rightarrow$	4	:	2	:	1

units/day

$(A+B)$ 's one day work is  $(4+2)$  units = 6 units

And they complete in 4 days.

So total work :  $6 \times 4 = 24$  units

And C completes whole work in



$$= \frac{24 \text{ units}}{1 \text{ units/day}} = 24 \text{ days}$$

101. (c) If no. of days remain same (Like in this question for men, women and boys), so it clearly shows

$$1 \text{ man} = 2 \text{ women} = 3 \text{ boys}$$

(it means work done by one man in 88 day will be done by 2 women in 88 days so this show efficiency)

$$1 \text{ man} = 2 \text{ women}$$

$$\frac{1}{2} \text{ man} = 1 \text{ woman}$$

Similarly

$$1 \text{ boys} = \frac{1}{3} \text{ man}$$

$$1 \text{ man} + 1 \text{ woman}$$

+ 1 boy will do work in :

$$1 \text{ man} + \frac{1}{2} \text{ man} + \frac{1}{3} \text{ man}$$

$$\frac{6 + 3 + 2}{6} = \frac{11}{6} \text{ men}$$

1 man does in 88 days

$$\frac{11}{6} \text{ man does in} = \frac{88 \times 6}{11} = 48 \text{ days}$$

102. (b)

Tapes	:	mihir
Efficiency	2	: 1
Units/day		
T + M complete in 12 days		
Total work $12 \times (2+1) = 36$ units		
Tapes alone complete the whole work in		
	$\Rightarrow \frac{36}{2}$	$= 18 \text{ days}$

103. (b) According to questions,

$$(2m + 3w) = 4m$$

$$3w = 4m - 2m$$

$$3w = 2m$$

$$3m + 3w = 3m + 2m$$

$$3m + 3w = 5m$$

4 men can do work in 20 days

1 man can do work in  $20 \times 4$

5 men can do work in  $\frac{20 \times 4}{5} = 16 \text{ days}$

Alternate:

$$(2M + 3W) \times 20 = 4M \times 20$$

$$\frac{M}{W} = \frac{3}{2}$$

$$\text{Total work} = (2 \times 3 + 3 \times 2) \times 20 = 240 \text{ units}$$

$$5 \text{ mens efficiency} = 5 \times 3 = 15$$

$$\text{Required no. of days} = \frac{240}{15} = 16 \text{ days}$$

104. (a)  $20M \times 20 \text{ days} = 24W \times 20 \text{ days}$

$$5M = 6W$$

$$\downarrow \times 6 = \downarrow \times 6$$

$$30M = 36W$$

$$30M = 36W$$

So,  $(30M + 12W)$  complete the whole work in

$$24W \times 20 = (30M + 12W) \times x$$

$$24W \times 20 = (36W + 12W) \times x$$

$$24W \times 20 = 48W \times x$$

$$x = 10 \text{ days}$$

Alternate :

$$20M \times 20 \text{ days} = 24W \times 20 \text{ days}$$

$$5M = 6W$$

$$\frac{M}{W} = \frac{6}{5}$$

$$\frac{M}{W} = \frac{6}{5}$$

$$\text{Total work} = 20 \times 6 \times 20 \text{ units}$$

Efficiency of  $(30M + 12W)$

$$= 30 \times 6 + 12 \times 5$$

$$= 180 + 60 = 240$$

$$\text{Required no. of days} = \frac{20 \times 6 \times 20}{240} = 10 \text{ days}$$

105. (b)  $20W \times 16 = 16M \times 15$

$$20W = 15M$$

$$4W = 3M$$

$$\frac{M}{W} = \frac{4}{3}$$

$$\frac{M}{W} = \frac{4}{3}$$

$$\therefore \text{Man} : \text{Woman}$$

$$4 : 3$$

106. (b) We can clearly see the clue that (men + women) are half in second case

So, 6 men + 8 women can do work in 10 days

3 men + 4 women can do work in  $10 \times 2 = 20$  days

107. (b) Equating the work

$$(2M + 3W) \times 10 = (3M + 2W) \times 8$$

After solving

$$\text{We get, } 2M = 7W$$

$$\frac{M}{W} = \frac{7}{2}$$

$$\text{Total work} = (2 \times 7 + 3 \times 2) \times 10$$

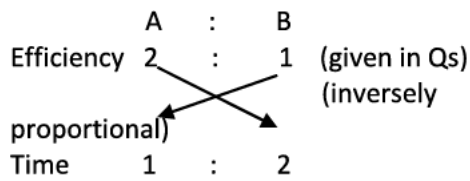
$$= 20 \times 10 = 200 \text{ units}$$

$$\text{Eff. of } 2M + 1W = 2 \times 7 + 2 = 16$$

$$\therefore \text{ number of days} = \frac{200}{16} = \frac{25}{2}$$

$$= 12\frac{1}{2} \text{ Days}$$

108. (b)



Total work = (one day's work of A and B) × (Total no. of days)

$$\Rightarrow (2 + 1) \times 14$$

$$\text{T.W} = 42 \text{ units}$$

$$\text{A alone finishes in} = \frac{42}{2} = 21 \text{ days}$$

109. (b)

$$\frac{5 \text{ men} + 2 \text{ women}}{4 \text{ work}} = (1 \text{ man} + 1 \text{ woman})$$

$$5 \text{ men} + 2 \text{ women} = 4 \text{ men} + 4 \text{ women}$$

$$1 \text{ man} = 2 \text{ women}$$

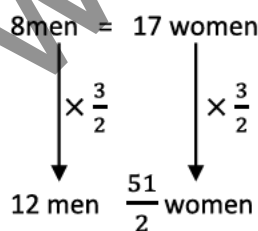
$$\frac{\text{man}}{\text{woman}} = \frac{2}{1}$$

$$M : W$$

$$2 : 1$$

110. (c)

According to question,  
8 men = 17 women  
(Because they do a work in same no. of days)  
Convert men into women



$$\text{Total work} = 17 \times 33 \times 3$$

(Let 1 woman works 1 unit/day then 17 women will do 17 units/day)

$$12 \text{ men} + 24 \text{ women}$$

$$\frac{51}{2} \text{ women} + \frac{24}{1} \text{ woman} = \frac{99}{2} \text{ women}$$

→ will do (17×33) work in

$$\Rightarrow \frac{17 \times 33}{\frac{99}{2}} \times 3 = 34 \text{ days}$$

111. (a)

Man	:	Woman	
Efficiency	3	:	2

One day's work of a man and a woman = (3 + 2) = 5 units  
Total work = 18 × 5 = 90 units  
A woman can complete the whole work in  $\frac{90}{2} = 45$  days

112. (a) (3men + 4boys) 12 days = (4men + 3 boys) 10 days

$$18 \text{ men} + 24 \text{ boys} = 20 \text{ men} + 15 \text{ boys}$$

$$2 \text{ men} = 9 \text{ boys} \dots \dots \dots (i)$$

$$4 \text{ men} + 3 \text{ boys} = (2 \times 9) \text{ boys} + 3 \text{ boys} = 21 \text{ boys}$$

21 boys can do a work in 10 days  
Total work = 21 × 10 = 210 units  
2 men + 3 boys = 9 boys + 3 boys  
(From eq i)  
= 12 boys  
12 boys can do 210 units in  
 $\frac{210}{12} = \frac{35}{2} = 17\frac{1}{2} \text{ days}$

Alternate:

$$(3M + 4B) \times 12 = (4M + 3B) \times 10$$

$$2M = 9B$$

$$\frac{M}{B} = \frac{9}{2}$$

$$\text{Total work} = (3 \times 9 + 4 \times 2) \times 12 = 35 \times 12 \text{ units}$$

$$\text{Efficiency of 2 men and 3 boys} = (2 \times 9) + (3 \times 2) = 24$$

$$\text{Time taken by } (2M + 3B) = \frac{35 \times 12}{24}$$

$$= 17\frac{1}{2} \text{ days}$$

113. (a)

According to question,  
8 men = 12 boys (Description same as Q 187)  
4 Men = 6 boys

$$20 \text{ men} + 6 \text{ boys} = (20+4) \text{ men} = 24 \text{ men}$$

8 men can do a piece of work in 16 days  
 24 men can do a piece of work in

$$\frac{16 \times 8}{24} = 5 \frac{1}{3}$$

**Alternate :-**

$$8M \times 16 = 12B \times 16$$

$$8M = 12B$$

$$\frac{M}{B} = \frac{3}{2}$$

Total work =  $8 \times 3 \times 16$  units  
 Efficiency of (20M+6B)  
 =  $20 \times 3 + 6 \times 2 = 72$  units  
 No. of days =  $5 \frac{1}{3}$  days

**114. (d)** 10 men = 20 women = 40 children  
 (efficiency of men, women and children will be in calculated by this ratio.  
 As they complete work in same days)  
 Convert them in one figure:

$$10 \text{ men} = 20 \text{ Women}$$

$$\frac{10}{20} \text{ men} = 1 \text{ women} \rightarrow 5 \text{ women}$$

$$= \frac{1}{2} \times 5 = \frac{5}{2} \text{ men} \dots \dots \dots (i)$$

$$\frac{1}{4} \text{ men} = 1 \text{ child} \rightarrow 5 \text{ children} = \frac{1}{4} \times 5$$

$$= \frac{5}{4} \text{ men} \dots \dots \dots (ii)$$

5 men + 5 women + 5 children

$$= \left( 5 + \frac{5}{2} + \frac{5}{4} \right) \text{ men}$$

$$= \frac{20 + 10 + 5}{4} = \frac{35}{4} \text{ men}$$

Now,

$$\text{If 10 men can do a work in } \frac{7 \times 10}{\frac{35}{4}} = 8 \text{ months}$$

**Alternate:-**

$$10M \times 7 \text{ Months} = 20W \times 7 \text{ Months}$$

$$= 40 C \times 7 \text{ months}$$

$$10 M = 20W = 40C$$

$$1M = 2W = 4C$$

$$\frac{M}{4} = \frac{W}{2} = \frac{C}{1} \leftarrow \text{Efficiency}$$

Total work =  $10 \times 4 \times 7$  units  
 Efficiency of 5M + 5W + 5C  
 =  $5 \times 4 + 5 \times 2 + 5 \times 1$   
 =  $5 (4 + 2 + 1)$

$$= 35 \text{ units/day}$$

Time taken by (5M + 5W + 5C)

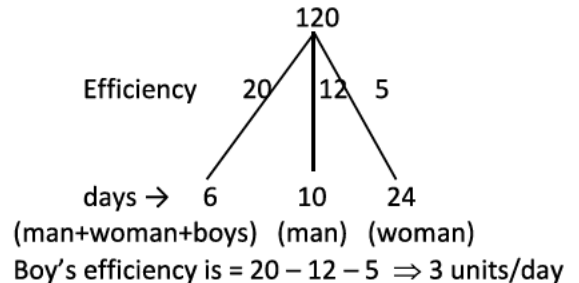
$$= \frac{10 \times 4 \times 7}{35}$$

$$= 8 \text{ months}$$

**115. (c)** According to question,  
 (2men + 3 boys) × 10 days  
 = (3 men + 2 boys) × 8 days  
 20 men + 30 boys = 24 men + 16 boys  
 2 men = 7 boys  
 2 men + 1 boy = 7 boys + 1 boys = 8 boys  
 From i<sup>st</sup> line :  
 2 men + 3 boys ⇒ 7 boys + 3 boys  
 ⇒ 10 boys given  
 10 boys can do a piece of work in 10 days  
 1 boys can do a piece of work in 10 × 10  
 8 boys can do a piece of work in

$$\frac{10 \times 10}{8} = 12 \frac{1}{2} \text{ days}$$

**116. (c)**



Boy can complete the work in  $\frac{120}{3} = 40$  days

**117. (d)** 40 men = 60 women = 80 children  
 2 men = 3 women = 4 children  
 2 men = 3 women  
 1 women =  $\frac{2}{3}$  men → 10 women  
 →  $\frac{2}{3} \times 10 = \frac{20}{3}$  men  
 Similarly  
 2 men = 4 children  
 1 children =  $\frac{1}{2}$  men → 10 children  
 =  $\frac{10}{2} = 5$  men

$$10 \text{ men} + 10 \text{ women} + 10 \text{ children} \\ = 10 \text{ men} + \frac{20}{3} + 5 \Rightarrow \frac{30 + 20 + 15}{3}$$

$$10 \text{ men} + 10 \text{ women} + 10 \text{ children} \\ = \frac{65}{3} \text{ men}$$

40 men can do a piece of work in 6 months

1 man can do a piece of work in  $6 \times 40$

$$\frac{65}{3} \text{ men can do a piece of work in } \frac{6 \times 40}{\frac{65}{3}}$$

$$= 11 \frac{1}{13} \text{ months}$$

$$40 \text{ m} = 60 \text{ w} = 80 \text{ c}$$

$$2 \text{ m} = 3 \text{ w} = 4 \text{ c}$$

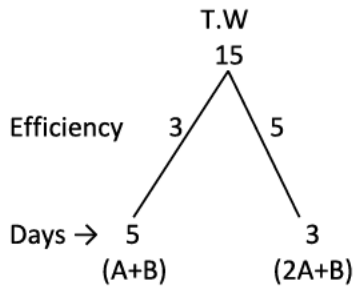
$$\text{m} : \text{w} : \text{c} = 6 : 4 : 3 \text{ (Efficiency)}$$

$$\text{Total work} = 40 \times 6 \times 6 = 1440 \text{ units}$$

$$\text{Total time taken by } (10 \text{ m} + 10 \text{ w} + 10 \text{ c})$$

$$= \frac{\text{Total work}}{\text{Efficiency}} = \frac{1440}{130} = 11 \frac{1}{13} \text{ days}$$

118. (c)



Now,

Assume A eff. is 2 units B's is 1 units.

So it satisfies the equation of both cases

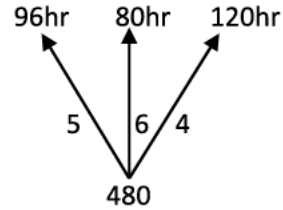
So actual efficiency of A is 2 Units/day

$$\text{A alone complete the work in } = \frac{\text{T.W}}{\text{efficiency}}$$

$$\frac{15}{2} = 7 \frac{1}{2} \text{ days}$$

119. (C)

$$1 \text{ M} + 3 \text{ W} + 4 \text{ B} \quad 2 \text{ M} + 8 \text{ B} \quad 2 \text{ M} + 3 \text{ W}$$



$$2 \text{ M} + 8 \text{ B} = 6 \text{ units/hr}$$

$$\text{So, } 1 \text{ M} + 4 \text{ B} = 3 \text{ units/hr}$$

$$1 \text{ M} + 3 \text{ W} + 4 \text{ B} = 5 \text{ units/hr}$$

$$3 \text{ W} + 3 = 5$$

$$3 \text{ W} = 2 \text{ units/hr}$$

$$\text{W} = \frac{2}{3} \text{ unit/hr}$$

Now,

$$2 \text{ M} + 3 \text{ W} = 4$$

$$2 \text{ M} = 4 - 2 = 2$$

$$\text{M} = 1 \text{ unit/hr}$$

Hence,

$$2 \text{ M} + 8 \text{ B} = 6$$

$$2 + 8 \text{ B} = 6$$

$$8 \text{ B} = 6 - 2 = 4$$

$$\text{B} = \frac{1}{2} \text{ unit/hr}$$

$5 \text{ M} + 12 \text{ B}$  will complete the whole work in

$$= \frac{480}{5 \text{ M} + 12 \text{ B}} = \frac{480}{5 \times 1 + \frac{12}{2}} = \frac{480}{11}$$

$$43 \frac{7}{11} \text{ hrs.}$$

120. (d)

$$(3 \text{ men} + 7 \text{ women}) \times 5 \text{ days}$$

$$= (4 \text{ men} + 6 \text{ women}) \times 4 \text{ days}$$

$$1 \text{ men} = 11 \text{ women}$$

$$3 \text{ men} + 7 \text{ women}$$

$$= (3 \times 11) \text{ women} + 7 \text{ women} = 40 \text{ women}$$

$$40 \text{ women can do a work in 5 days}$$

$$1 \text{ can do a work in } 5 \times 40 \text{ days}$$

$$10 \text{ women can do a work in } \frac{5 \times 40}{10} = 20 \text{ days}$$

121. (a)

According to question,

$$12 \text{ men} = 24 \text{ boys}$$

$$3 \text{ men} = 6 \text{ boys}$$

$$\downarrow \times 5$$

$$\downarrow \times 5$$

15 men 30 boys  
 15 men + 6 boys = 30 boys + 6 boys = 36 boys  
 24 boys can do a work in 66 days  
 1 boys can do a work in  $66 \times 24$   
 36 boys can do a work in  $\frac{66 \times 24}{36} = 44$  days

**Alternate :**

$$12M \times 6 = 24B \times 66$$

$$\frac{M}{B} = \frac{2}{1}$$

Total work =  $12 \times 2 \times 66$  units  
 Efficiency of (15M + 6B)  
 =  $(15 \times 2 + 6 \times 1) = 36$   
 Time taken by (15M + 6B)  
 $\frac{12 \times 2 \times 66}{36} = 44$  days

**122. (c)** According to question,  
 1 man = 2 women = 3 boys  
 1 man = 2 woman, 1 man = 3 boy  
 $\frac{1}{2}$  man = 1 woman,  $\frac{1}{3}$  man = 1 boy  
 1 man + 1 woman + 1 boy =  
 $1 \text{ man} + \frac{1}{2} \text{ man} + \frac{1}{3} \text{ man} = \frac{11}{6} \text{ man}$   
 1 man can complete a work in 88  
 $\frac{11}{6}$  man can complete a work in  $\frac{88}{6} = 48$  days

**123. (a)** Given  
 $\Rightarrow 4m + 6w \rightarrow 8$  days  
 $\Rightarrow 32m + 48w \rightarrow 1$  day.....(i)  
 $\Rightarrow 2m + 9w \rightarrow 8$  days  
 $\Rightarrow 16m + 72w \rightarrow 1$  day3.....(ii)  
 $\Rightarrow$  From equation (i) = (ii)  
 $\Rightarrow 32m + 48w = 16m + 72w$   
 $\Rightarrow 32m - 16m = 72w - 48w$   
 $\Rightarrow 2m = 3w$   
 $\Rightarrow$  Here, it is given that a group of 4m+6women can do the work in 8 days, converting the whole equation into women.  
 $\Rightarrow 4m + 6w \rightarrow 8$  days  
 $\Rightarrow (2 \times 2m) + 6w \rightarrow 8$  days  
 $\Rightarrow (2 \times 3w) + 6w \rightarrow 8$  days  
 $\Rightarrow 6w + 6w \rightarrow 8$  days  
 $\Rightarrow 12w \rightarrow 8$  days  
 $\Rightarrow$  i.e. 12 women can do the work in 8 days

$\Rightarrow$  Then a group of 18 women can do the work  
 $M_1 \times D^1 = M^2 \times D_2$   
 $12w \times 8d = 18w \times ?$   
 $days = \frac{12 \times 8}{18} \Rightarrow 5\frac{1}{3}$  days

**124. (a)** According to question,  
 $\Rightarrow 4m = 8w \rightarrow 15$  days  
 $\Rightarrow$  i.e.  $4m = 8w$   
 $\Rightarrow 1m = 2w$   
 $\Rightarrow 6m + 12w = ?$   
 $\Rightarrow$  Converting the whole group into women  
 $\Rightarrow 12w + 12w = ?$   
 $\Rightarrow 24w = ?$   
 $\Rightarrow M_1 \times D_1 = M_2 \times D_2$   
 $\Rightarrow 8w \times 15 = 24 \times ?$   
 $\Rightarrow days = \frac{8 \times 15}{24}$   
 Days = 5  
 $\Rightarrow$  Therefore, time taken by a group of 6m + 12w is=5 days

**125. (a)** According to the question,  
 15 men = 20 days  
 300 men = 1 das .....(i)  
 24 women = 20 days  
 480 women = 1 days .....(ii)  
 Compare equation (i) and (ii)  
 300 men = 480 women  
 5 men = 8 women .....(iii)  
 10 men + 8 women = ?  
 10 men + 5 men = ?  
 15 men = ?  
 15 men  $\times$  20 days = 15 men  $\times$  x days  
 x = 20 days

**Alternate:-**

$15M \times 20$  days =  $24W \times 20$  days  
 $\frac{M}{W} = \frac{8}{5}$   
 So, 1 man work 8 units work in one day  
 And 1 women work 5 units work in one day.  
 Total work = hence, (10M+8W)  
 Work whole work in 'D' days  
 $(10M + 8W) \times D = 15 \times 8 \times 20$   
 $(10 \times 8 + 8 \times 5) \times D = 15 \times 8 \times 20$   
 $(80 + 40) \times D = 15 \times 8 \times 20$   
 D = 20 days

$$\frac{x \times 30}{1} = \frac{(x + 5) \times 20}{1} [30 - 10]$$

$$= 20 \text{ days}$$

$$3x = 2x + 10$$

$$x = 10$$

129. (C) Let additional men be x

$$\frac{25 \times 4}{\text{work} \times \frac{1}{3}} = \frac{(25+x) \times 12}{\frac{2}{3} \left( \text{Remaining work } 1 - \frac{1}{3} \right)}$$

$$x = 75$$

130. A : B

A.T.Q.

No of unit of work done 1 : 2

Time taken 1 : 6

We balance the time of A with B.

We have to equal their work according to their time

A : B A + B work

Work done 6 : 2

Time taken 6 : 6

If A work 1 unit in 1 unit time so he works 6 units work in 6 units time

A : B = 3 : 1  $\rightarrow$  3 + 1 = 4 units/day  
Together they complete in 10 days.

So, total work = 4  $\times$  10 = 40

B alone will do whole work in =  $\frac{40}{1} = 40$  days

131. (C) ATQ,

If kamal is 100 % efficient, then Bimal 150 % efficient (50% more),

$$\frac{B}{K} = \frac{150}{100} = \frac{3}{2}$$

Kamal Bimal

Efficiency  $\rightarrow$  2 units/day 3 units/day

Total work. 15 days  $\times$  2 units/day = 30 units

Bimal will do that work =  $\frac{30}{3} = 10$  days

132. (c) Let 1 men does 1 unit of work per day

Total work : 8  $\times$  12 = 96 units

6 days work of 8 men  $\rightarrow$  8  $\times$  6 = 48 units.

126. (c) According to question,  
3 men = 5 women  
(As they complete the same work in same time)

$$6 \text{ men} + 5 \text{ women} = 6 \text{ men} + 3 \text{ men}$$

$$= 9 \text{ men}$$

If, 3 men does a work in 12 days

1 men does a work in =  $12 \times 3$

9 men does a work in  $\frac{12 \times 3}{9}$   
= 4 days

Alternate:-

$$3M \times 12 = 5W \times 12$$

$$\frac{M}{W} = \frac{5}{3}$$

Total work = 3  $\times$  5  $\times$  12 = 15  $\times$  12 = 180 units

Efficiency of 6 M + 5 W = (6  $\times$  5 + 5  $\times$  3) = 45

Time taken by (6M + 5W) =  $\frac{180}{45} = 4$  days

127. (a) 10M  $\times$  12 days = 10 W  $\times$  6 days

$$2M = 1W$$

$$\frac{M}{W} = \frac{1}{2}$$

1M work = 1 unit/day

1W work = 2 units/day

Total work = 10M  $\times$  12 days = 10  $\times$  1  $\times$  12 = 120 units

Time required (10M+10W)

$$= \frac{\text{Total work}}{\text{eff.}}$$

$$= \frac{120}{10 \times 1 + 10 \times 2} = \frac{120}{30} = 4 \text{ days}$$

128. (a) Let 'x' are the men in working

$$\text{By formula } \frac{M_1 D_1}{W} = \frac{M_2 D_2}{W_2}$$

Work left  $\rightarrow 96 - 48 = 48$  units

After 6 day 4 men join. So total men is 12 men (8 + 4)

they will do 12 unit of work per day

Now,

Remaining work completed in  $\rightarrow \frac{48}{12} = 4$  days

133. (b) Let no. of persons be 'N'

$$\frac{N \times 55}{1} = \frac{(N + 6) \times 44}{1}$$

$$5N = 4N + 24$$

$$N = 24$$

134. (a)

$$\frac{8M \times 9h \times 20days}{1 \text{ unit work}} = \frac{7M \times 10h \times x}{1 \text{ unit work}}$$

$$x = \frac{144}{7} = 20\frac{4}{7} \text{ days}$$

135. (b) According to formula

Let 'D' is no of days.

$$\frac{639 \times 12 \times 5}{1 \text{ road}} = \frac{30 \times 6 \times D}{1 \text{ road}}$$

$$D = 213 \text{ days}$$

136. (a) Here work is 280 m length of wall and 100 m length of wall

Let 'M' men will finish 100 m road.

$$\frac{72 \times 21}{280} = \frac{M \times 18}{100} \Rightarrow M = 30$$

137. (c)

$$\frac{6prson \times 8hr}{8400} = \frac{9person \times 6hr}{\text{amount}}$$

Amount calmed by 9 person =  
Rs. 9450

138. (a)

$$\frac{5_{person} \times 8_{days} \times 7_{hr}}{1} = \frac{(5 + 2_{person}) \times 4_{days} \times H_{perday}}{1}$$

$$10 = H \text{ per days}$$

139. (d)

$$\frac{4_{mal-wavers} \times 4_{day}}{8_{mat-weavers} \times 8_{days}} = \frac{4_{mats}}{N_{mats}}$$

$$\Rightarrow N = 16 \text{ mats}$$

140. (a)

$$\frac{10_{men} \times 6_{hr} \times 18_{days}}{1 \text{ work}} = \frac{15_{men} \times 12_{days} \times H \text{ hr/day}}{1 \text{ work}}$$

$$= 6 \text{ hrs/day}$$

141. (d) Let there were 'N' number of men in beginning.

$$\Rightarrow N_{men} \times 60_{days} = (N+8)_{men} \times (60-10)$$

$$6N = 5N + 40$$

$$N = 40$$

142. (a)

$$\frac{12persons \times 4days}{1work} = \frac{persons \times 2days}{8work}$$

$$\Rightarrow \text{persons} = 192$$

143. (b) let total No. of worker in beginning in 'N'  
According to question,

$$\frac{N \times 100_{days}}{1 \text{ work}} = \frac{(N-10) \times 100_{days}}{1 \text{ work}}$$

$$100N = 110N - 1100$$

$$10N = 1100$$

$$\Rightarrow N = 110$$

144. (b) According to Question,

$$\text{Total work} = 12M \times 12D = 144 \text{ units}$$

$$\text{Work done by 12 men in 6 days} = 12 \times 6 = 72 \text{ units}$$

$$\text{Best work} = 144 - 72 = 72 \text{ units}$$

Required time for 6 men to complete the

$$\text{work} = \frac{72}{6} = 12$$

Hence,

$$\text{Total time} = 12 + 6 = 18 \text{ days}$$

$$\text{Extra time} = 18 - 12 = 6 \text{ days}$$

145. (d) By putting the value in formula as given in question no. 71.

Let 'N' persons are needed to complete

the work.

According to Question,

$$\frac{2\text{men} \times 9\text{days}}{1\text{work}} = \frac{N\text{men} \times 12\text{days}}{2\text{work}}$$

After solving,

$$N = 3 \text{ men}$$

$$\text{More man needed} = 3 - 2 = 1 \text{ man}$$

146. (b) Let 'n' number of man can be discharged.  
According to question

$$\frac{60\text{men} \times 60\text{days}}{\frac{3}{4}\text{work}} = \frac{(60-n)\text{men} \times 30\text{days}}{\frac{1}{4}\text{work}}$$

$$\left[ \text{formula} \right] \text{ of } 40 = 60 - n$$

$$n = 20$$

147. (b) 60 men works for 200 days. They stops for 10 day due to bad weather.

So the work is to complete in  $(50-10)=40$  days in order to

complete in scheduled time i.e. 250 days.

Let 'n' number of more man is required.

$$(60\text{men} \times 200\text{days}) + (60+n)\text{men} \times 40\text{days}$$

$$= 60\text{men} \times 250\text{days}$$

$$12000 + (60+n)\text{men} \times 40\text{days} = 15000$$

$$(60+n)40 = 3000$$

$$60+n = 75$$

$$\Rightarrow n = 15$$

Alternate:-

60 men can complete a work in 250 days but they work for 200 days.

$$\text{So, } 60 \times 50 = (60+x) \times 40$$

$$X = 15$$

148. (c)

$$\frac{28M \times 1\text{week}}{7/8} = \frac{x \times 1\text{week}}{1/8}$$

$$X = 4 \text{ men}$$

149. (d) According to question, efficiency of a man, a woman and a child are 5 : 4 : 2. Units/days.

One day work of 2 men =  $2 \times 5 = 10$  units

One day work of 3 women =  $3 \times 4 = 12$  units

One day work of 4 children =  $4 \times 2 = 8$  units.

Applying formula, let time taken is 'D' days.

$$\begin{aligned} & \frac{(10+12+8) \times 10\text{days}}{10\text{hectare}} \\ &= \left[ \frac{(6\text{men} \times 5) + (4\text{women} \times 4) + (7\text{children} \times 2) \times D}{16\text{hectare}} \right] \\ & \frac{(30) \times 10}{10} = \frac{[60] \times D}{16} \\ & D = 8 \text{ days} \end{aligned}$$

150. (d)

(Applying formula) Let work done by 'n' men and women.

$$\frac{P_{\text{men}} \times P_{\text{hours}} P_{\text{days}}}{P_{\text{units}}} = \frac{n_{\text{men}} n_{\text{hours}} n_{\text{days}}}{'W' \text{units}}$$

$$p^2 = \frac{n^3}{w} = W = \frac{n^3}{p^2}$$

151. (d)

$$\frac{2_{\text{person}} \times 2_{\text{days}}}{2_{\text{jobs}}} = \frac{100 \times D}{100_{\text{jobs}}}$$

(D is no. of days required)

After solving

$$D = 2 \text{ days}$$

152. (c) Let 'n' more number of man are required to complete the job in 20 days.

$$\begin{aligned} & \frac{80\text{days} \times 280\text{worker}}{3.5\text{km}} \\ &= \frac{(280+n)\text{worker} \times 20\text{days}}{1.5\text{km}} \end{aligned}$$

After solving:

$$480 = 280+n$$

$$N = 200$$

153. (c)

$$\frac{7\text{men} \times 12\text{days}}{1\text{work}} = \frac{(7+n)\text{men} \times 8\text{days}}{2\text{work}}$$



(n is additional no of men required)  
 $21 = 7 + n$   
 $n = 14$  men

154.

(a) A : B  
 Time 3 : 4  
 Eff. 1 : 2  
 We have to do time equal so,  
 A : B  
 Time  $3 \times 4$  :  $4 \times 3$   
 Eff.  $1 \times 4$  :  $2 \times 3$   
 A : B  
 Time 12 : 12  
 Eff. 4 : 6

Both do the work in 18 days  
 So,  
 Total work = (A+B)'s eff.  $\times$  18  
 $= (4 + 6) \times 18 = 180$  units.  
 B will complete the work in =  $\frac{180}{6} = 30$  days

Alternate:

A takes  $\frac{3}{4}$ th time of B

$$A = B \times \frac{3}{4}$$

$$\frac{A}{B} = \frac{3}{4} [time]$$

A does half as much work as B.

$$\frac{A}{B} = \frac{1}{2} [work]$$

We know,

$$\frac{m_1 h_1 d_1}{A \times 3} = \frac{m_2 h_2 d_2}{B \times 4}$$

$$\frac{1}{A} = \frac{2}{B}$$

$$\frac{A}{B} = \frac{2}{3} \rightarrow \text{Efficiency of A}$$

$$\frac{A}{B} = \frac{3}{2} \rightarrow \text{Efficiency of B}$$

(A+B)'s one day work = (3+2) = 5 units

Total work = 5  $\times$  18 = 90 units

$$\text{Time taken by B} = \frac{\text{Total Work}}{\text{Eff. of B}} = \frac{90}{3} =$$

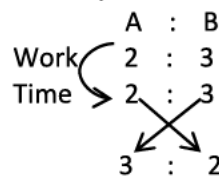
30 days

155. (b) A : B

Time 1 : 3 (Description same as Q no 135)

Work 1 : 2

Now equal the work of A and B



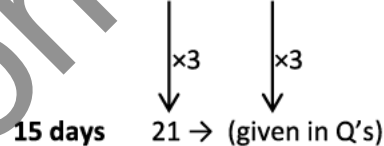
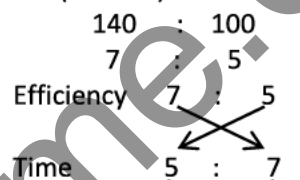
(Description same as Q.no. 135)

Total work = 10 days  $\times$  5 = 50 units

B alone completes whole work in =  $\frac{50}{2} = 25$  days

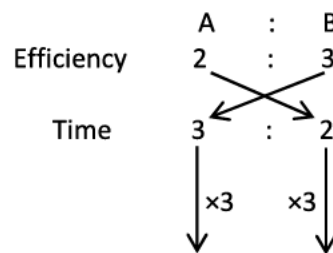
156. (c)

B : A  
 (100+40)% : 100% (Given in Qs)



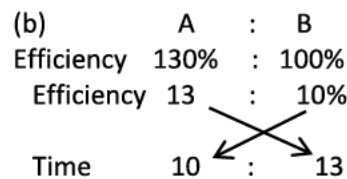
157. (c)

A : B  
 Efficiency 100% : 150% (Given in Qs)



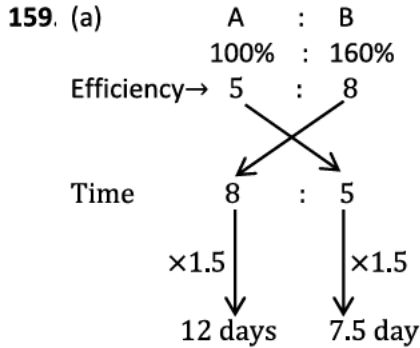
9 days      6 days

158 (b)



Total work = A's time  $\times$  efficiency of A  
 (A+B) will complete the work in

$$= \frac{\text{total work}}{\text{eff. of } (A + B)} = \frac{13 \times 23}{10 + 13} = 13 \text{ days}$$



$$= 7\frac{1}{2} \text{ days}$$

160. (c)

$$\begin{aligned} X_{\text{men}} \times 30_{\text{days}} &= (X + 6)_{\text{men}} \times (30 - 10)_{\text{days}} \\ X \times 30 &= (X + 6) \times 20 \\ 3X &= 2X + 12 \\ X &= 12 \text{ men} \end{aligned}$$

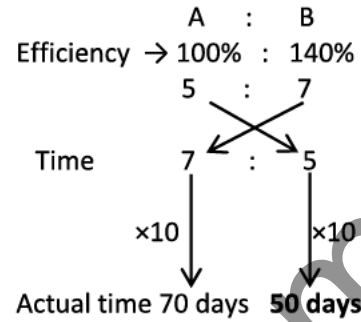
161. (a)

Let Anu work for 'T' hrs to finish in 12 days.  
 $18_{\text{days}} \times 8_{\text{hrs}} = 12_{\text{days}} \times T_{\text{hrs}}$   
 $T = 12_{\text{hrs}}$

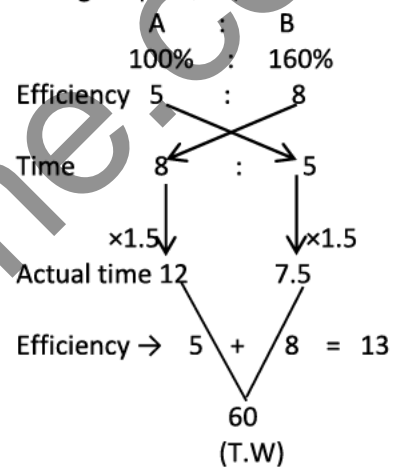
162. (d) Put values in formula

$$\begin{aligned} \frac{(x - 1)_{\text{men}} \times (x + 1)_{\text{days}}}{9_{\text{work}}} &= \frac{(x + 2)_{\text{men}} \times (x - 1)_{\text{days}}}{10_{\text{work}}} \\ \frac{x + 1}{9} &= \frac{x + 2}{10} \\ 10x + 10 &= 9x + 18 \\ X &= 8 \end{aligned}$$

163. (c)



164. (d) According to question,



Time taken by A and B together to complete the task =  $\frac{60}{13}$  days

165. (b) Let there were N carpenters in the beginning

According to question,

$$\frac{N_{\text{men}} \times 9_{\text{days}}}{1_{\text{work}}} = \frac{(N - 5)_{\text{men}} \times 12_{\text{days}}}{1_{\text{work}}}$$

$$\begin{aligned} 3N &= 4N - 20 \\ N &= 20 \text{ men} \end{aligned}$$

166. (d) Let there are N persons in the beginning and Let there was 2 units of work in beginning.

$$\begin{aligned} \frac{N \times 12}{2_{\text{work}}} &= \frac{2N \times D}{1_{\text{work}}} \\ (D - \text{days taken to finish the work}) \\ 6 &= 2D \\ 3 &= D \end{aligned}$$

167. (c) Let 'H' hours taken to finish the job

$$\begin{aligned} 80_{\text{persons}} \times 16_{\text{days}} \times 6_{\text{hours}} &= \\ 64_{\text{persons}} \times 15_{\text{days}} \times H_{\text{hours}} & \end{aligned}$$

After solving,

$$H = 8 \text{ hours}$$

168. (b)  $3 \text{ men} \times 6 \text{ days} = (3 \text{ men} \times 2 \text{ days}) + [(3+3)\text{men} \times D \text{ days}]$

$$18 - 6 = 6 \times D$$

$$\frac{12}{6} = D$$

$$D = 2 \text{ days}$$

169. (b) According to question,

$$4 \text{ men} = 6 \text{ women}$$

$$2 \text{ men} = 3 \text{ women}$$

$$10 \text{ men} + 3 \text{ women} = 10 \text{ men} + 2 \text{ men}$$

$$10 \text{ men} + 3 \text{ women} = 12 \text{ men} \dots\dots\dots(i)$$

$$\frac{4_{\text{men}} \times 12_{\text{days}} \times 7_{\text{hours}}}{1_{\text{work}}}$$

$$= \frac{12_{\text{men}} \times D_{\text{days}} \times 8_{\text{hours}}}{2_{\text{work}}}$$

After solving we get

$$D = 7 \text{ days}$$

170. (c) According to question,

$$X_{\text{men}} \times X_{\text{days}} = Y_{\text{men}} \times D_{\text{days}}$$

$$D = \frac{x^2}{y}$$

171. (d) 'n' no of men can withdrawn

$$\frac{(110_{\text{men}} \times 48_{\text{days}})}{\frac{3}{5} \text{work}} = \frac{(110 - n)44}{\frac{2}{5} \text{work}}$$

$$110 \times 16 = (110 - n)22$$

$$160 = (110 - n)2$$

$$n = 30$$

172. (b) Let 'n' number of men are required.

$$\frac{200_{\text{men}} \times 50_{\text{days}}}{\frac{1}{4}}$$

$$= \frac{(200 + n)\text{men} \times 100_{\text{days}}}{\frac{3}{4}}$$

$$3 \times 100 = 200 + n$$

$$N = 100$$

173. (b) Let 'n' no of men he discharged

$$\frac{120_{\text{men}} \times 64_{\text{days}}}{\frac{2}{3} \text{work}}$$

$$= \frac{(120 - n)_{\text{men}} \times 60}{\frac{1}{3} \text{work}}$$

$$64 = 120 - n$$

$$n = 56 \text{ men}$$

174. (a) 2 men can do a work in 'x' days

1 man can do a work in =  $(2 \times x)$  days

Y women can do a work in 3 days

1 woman can do a work in 3y days

$$1 \text{ man} : 1 \text{ woman}$$

$$\text{days } 2x : 3y$$

$$\text{eff. } 3y : 2x$$

Alternate:-

$$2M \times x = yW \times 3$$

$$\frac{M}{W} = \frac{3y}{2x} \Rightarrow M : W = 3y : 2x$$

175. (b) Let worker work in 'n' hours

Farmer worker

$$6_{\text{hr}} \times 18_{\text{days}} = 12_{\text{days}} \times 'n'_{\text{hrs}}$$

$$6 \times \frac{18}{12} = n$$

$$n = 9 \text{ hrs}$$

176. (b) Let 'H' no of hours taken

$$\frac{15_{\text{men}} \times 20_{\text{days}} \times 8_{\text{hours}}}{1_{\text{work}}}$$

$$= \frac{20_{\text{men}} \times 12_{\text{days}} \times H_{\text{hours}}}{1_{\text{work}}}$$

$$H = 10 \text{ hours}$$

177. (d) let 'N' no. of men are needed to complete the whole task

$$\frac{N_{\text{men}} \times 5_{\text{days}}}{\frac{3}{5} \text{work}} = \frac{15_{\text{men}} \times 7_{\text{days}}}{\frac{1}{3} \text{work}}$$

$$N = 63 \text{ men}$$

178. (b) According to the question,

$$\Rightarrow \frac{12 \times 6 \times 240}{460} = \frac{18 \times 360 \times 8}{x}$$

$$\Rightarrow x = \frac{18 \times 360 \times 8 \times 460}{12 \times 6 \times 240} = 1380$$

179. (D)

$$= \frac{90 \text{ men} \times 16 \text{ days} \times 12 \text{ hours}}{1 \text{ work}}$$

$$= \frac{70 \text{ men} \times 24 \text{ days} \times 8 \text{ hours}}{W \text{ work}}$$

$$90 \times 16 \times 12 = \frac{70 \times 24 \times 8}{W}$$

$$9W = 7, \quad W = \frac{7}{9} \text{ Ans.}$$

180. (A)

$$\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2} = \frac{200 \times 50}{1/4} = \frac{M_2 \times 100}{3/4}$$

$$M_2 = 300$$

$$\text{So additional men} \\ = 300 - 200 = 100$$

181. (c) According to the question,

$$\frac{20 \times 10}{100} = \frac{10 \times x}{50}$$

$$X = 10 \text{ days}$$

182. (a)  $M_1 \times D_1 \times T_1 = M_2 \times D_2 \times T_2$ 

$$12 \times 8 \times 10 = 16 \times \frac{15}{2} \times D_2$$

$$D_2 = 8 \text{ days}$$

183. (a) From

$$\frac{m_1 d_1 t_1}{w_1} = \frac{m_2 d_2 t_2}{w_2}$$

Let extra workers be x

$$\Rightarrow \frac{20 \times 12}{5/8} = \frac{(20+x) \times 4}{3/8}$$

$$\Rightarrow$$

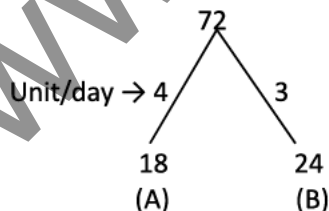
$$\Rightarrow 4 \times 12 = \frac{(20+x) \times 4}{3}$$

$$\Rightarrow 36 = 20+x$$

$$\Rightarrow X = 16$$

$$\Rightarrow \text{extra worker} = 16$$

184. (b)

**Description:**

Again, we will take T.W as L.C.M. of no. of days taken by A and B and we will calculate unit/day work by A and B)

If A and B worked for 8 days so they will

complete

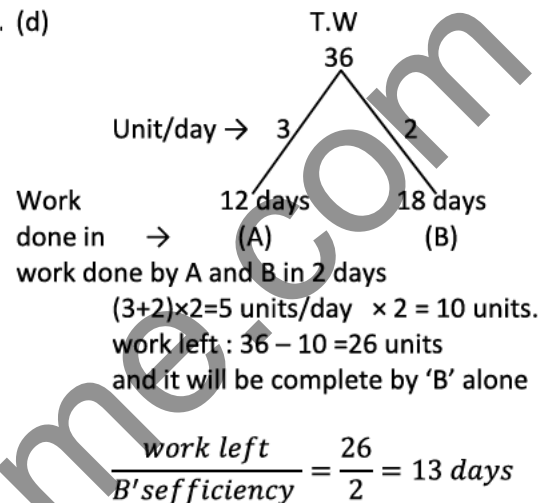
$$(4+3) \times 8 = 7 \times 8 = 56 \text{ units of work}$$

$$\text{Work left} = \text{T.W} - \text{work completed} \Rightarrow 72 - 56 = 16 \text{ units}$$

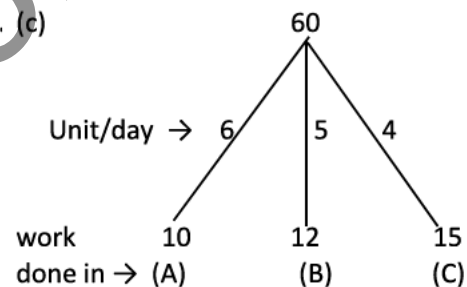
Now 16 units will be done by B (3 units/day)

$$= \frac{16}{3} = 5 \frac{1}{3} \text{ days}$$

185. (d)



186. (c)



In these type of questions where a person left few day before the completion of work, in that case calculate the unit of work he would have done if he had not left the work and add there unit in total work and divide by their total work per day.

Here A left 5 days before, it means. A would have done 30 units

and B left 2 days after 'A' it means he left 3 days before completion.

$$3 \text{ days} \times 5 \text{ unit/day} = 15 \text{ unit}$$

So,

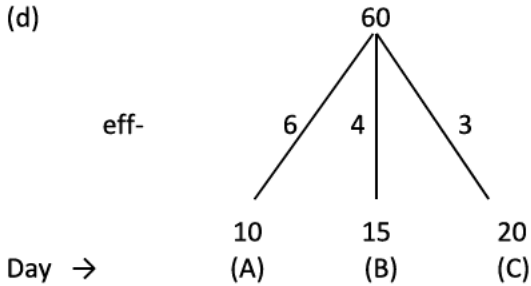
total work they would have completed if all of them had worked till end.

$$\text{Then, total work} = 60 + 30 + 15 = 105 \text{ units}$$

$$\text{and their one day work} = 6 + 5 + 4 = 15$$

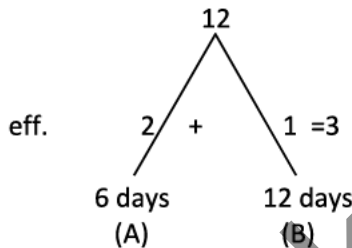
units/day  
 work finished in =  $\frac{105 \text{ units}}{15 \text{ units/day}}$   
 = 7 days

187. (d)



A and C work for two days. They completed  
 $(6+3) \times 2 \text{ days} = 18 \text{ units}$   
 work left :  $60 - 18 = 42 \text{ units}$   
 Now A replaces by B  
 (B+C) one day work =  $4 + 3$   
 (B+C) complete remaining work in  
 $\frac{T.W}{eff} = \frac{42}{7} = 6 \text{ days}$   
 Total days  $6 + 2 = 8 \text{ days}$

188. (c)



3 days work of A and B is  $3 \times 3 = 9 \text{ units}$   
 Work left =  $12 - 9 = 3 \text{ units}$   
 B finishes in  $\frac{3}{1} = 3 \text{ days}$   
 total no. of days  $\Rightarrow 3 + 3 = 6 \text{ days}$

189. (b) According to question

A+B complete work in 30 days  
 Take L.C.M. of (A+B)'s time to calculate the total work  
 Assume total work 30 units

Hence,

A+B work/day = 1 unit/day  
 (A+B)'s 20 days work =  $20 \times 1 \text{ unit/day} = 20 \text{ units}$

Rest work =  $30 - 20 = 10 \text{ units}$

Now,

Rest work done by A in 20 days

Then one day's work of A =  $\frac{10}{20} = \frac{1}{2}$

Total work done by A in =  $\frac{30}{\frac{1}{2}} = 60 \text{ days}$

Alternate:

$(A+B) \times 10 = A \times 20$

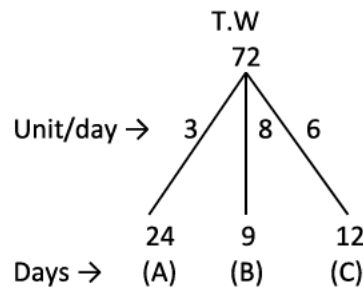
$\frac{A+B}{A} = \frac{2}{1}$

Total units of work =  $(A+B) \times 30 = 2 \times 30 = 60$

A's efficiency = 1

Total time =  $\frac{60}{1} = 60 \text{ days}$

190. (c)



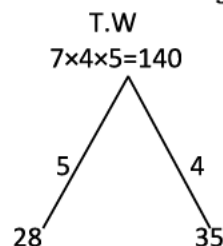
B and C start the work, in 3 days they will do

$(8+6) \text{ unit/day} \times 3 \text{ days} = 42 \text{ units}$

Work left =  $72 - 42 = 30$

A Will do in =  $\frac{30}{3} = 10 \text{ days}$

191. (c)



(7×4) (7×5)  
(A) (B)

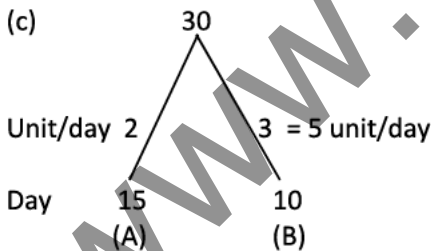
ATQ,  
B completes remaining work in 17 days.  
It means he had done  $17 \times 4 = 68$  unit of work.  
 $140 - 68 = 72$  units  
72 units of work would have been done by A and B together so they had completed in  $\frac{72}{5+4} = 8 \text{ days}$

A leaves after 8 days

192. (a) ATQ,

$60 - 15 = 45$  days work  
45 day's work of A = 30 day's work of B  
 $45A = 30B$   
Efficiency  $\frac{A}{B} = \frac{2}{3}$   
Total work =  $2 \times 60$   
Work done by A and B =  $\frac{2 \times 60}{(2+3)} = 24$  days

193. (c)



Work of A+B =  $5 \times 2 = 10$  units  
Work left  $30 - 10 = 20$  units  
A will complete this work in  $\frac{20}{2} = 10$  days  
Total time  $10 \text{ days} + 2 \text{ days} = 12 \text{ days}$

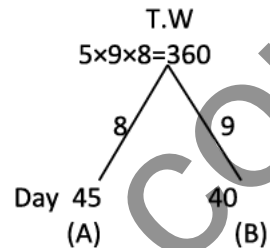
194. (a)



Day 20 12  
(A) (B)

4 days by A =  $3 \times 4 = 12$  days  
Work left  $60 - 12 = 48$  units.  
Now, A and B will complete in  $= \frac{48}{5+3} = 6$  days  
Total time  $6 + 4 = 10$  days

195. (b)



B complete total work in 23 days  $\rightarrow 23 \times 9$   
work done by A+B =  $360 - 207 = 153$   
They did it in  $\frac{153}{(9+8)} = 9$  days  
A left after 9 days

196. (d) According to question

1 M + 1B complete the work in 24 days.  
Last 6 days boy alone does work.  
They worked together for 22 days (Because the whole work complete in 28 days).  
Assume total work = 24 units.  
(1M+1B)per day work = 1 unit  
1M+1B do the work in 22 days = 22 units work  
Rest work =  $24 - 22$  units = 2 units  
Rest work done by Boy in 6 days  
Hence,

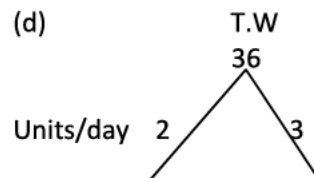
Per day work of boy =  $\frac{2}{6} = \frac{1}{3}$  unit per day

Man per day work =  $1 - \frac{1}{3} = \frac{2}{3}$

Man alone can do the work in =

$$\frac{\text{Total work}}{\text{eff. of man}} = \frac{24}{\frac{2}{3}} \times 3 = 36 \text{ days}$$

197. (d)



Days	18	12
	(A)	(B)

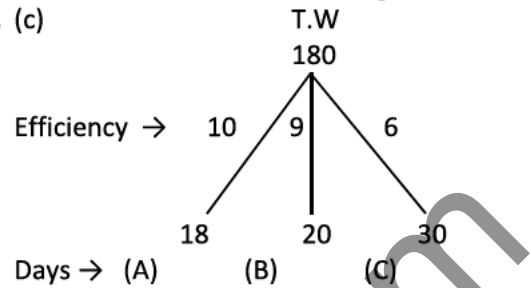
Description : see solution of Ques. No 5  
 $36 + (3 \times 3) = 45$  (T.W)

A+B one day work = 5 units/days

(A+B) will do whole work in (A+B)  $\frac{45}{5} = 9$  days

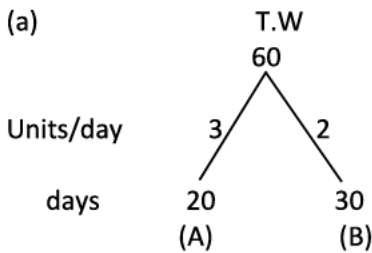
= 36 units  
 Total work left =  $60 - 36 = 24$  units  
 And B will complete this in =  $\frac{24}{4} = 6$  days

201. (c)



(B+C) 2 days work =  $(9+6) \times 2 = 30$  units  
 Work left =  $180 - 30 = 150$  units  
 A alone completes the remaining work in  
 $= \frac{150}{10} = 15$  days

198. (a)

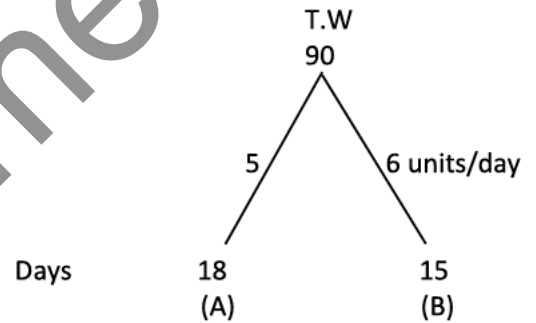


A's 10 days work =  $10 \times 3$  units/days = 30 units  
 So,  $(60 - 30) = 30$  units of work would have been done by A and B both and it took time:

$$\frac{30}{(3 + 2)} = 6 \text{ days}$$

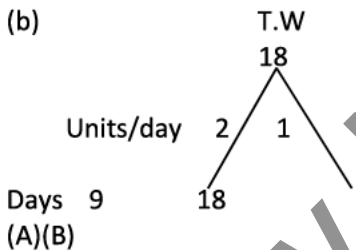
So, B worked for 6 days

202. (c)



B's 10 day's work =  $6 \times 10 = 60$  units  
 work left =  $90 - 60 = 30$  units  
 A does 30 units in =  $\frac{30}{5} = 6$  days

199. (b)



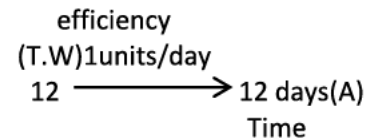
See exp. Ques. No. 5  
 Add 3 days work of A which is  $3 \times 2 = 6$  units.

T.W =  $6 + 18 = 24$

(A+B) one day work is 3 units

They will complete in  $\frac{24}{3} = 8$  days

203. (a)



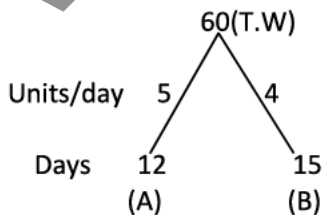
After 3 days A finishes 3 units.

$\frac{3 \text{ units/day}}{3 \text{ units}} \rightarrow 3 \text{ days (A+B)}$   
 (A+B)'s one day work = 3 units  
 A's one day work = 1 units  
 B's one day work =  $3 - 1 = 2$  units

B completes whole work in =  $\frac{T.W}{\text{efficiency}}$

$$\Rightarrow \frac{12}{2} = 6 \text{ days}$$

200. (c)



Total work done by A and B in 4 days is  $(5+4) \times 4$

204. (c) According to question,

Let the work is completed in 'D' days

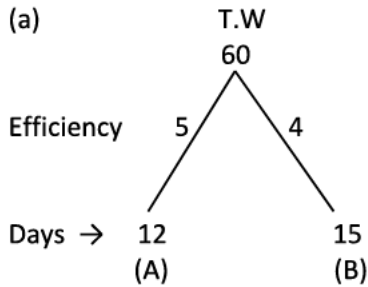
$$45_{\text{men}} \times 16_{\text{days}} = (45_{\text{men}} \times 4_{\text{days}})$$

$$+ (45+36)_{\text{men}} \times D$$

$$\frac{540}{81} = D$$

$$D = 6 \frac{2}{3} \text{ days}$$

205. (a)



(A+B)'s one day work = 5+4= 9 units

(A+B)'s 5 days work = 9×5=45 units

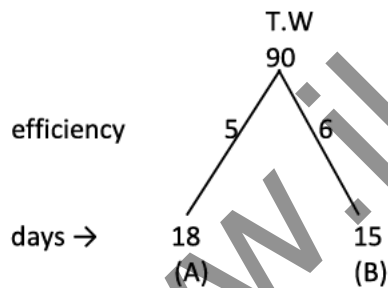
Work left = 60-45 = 15 units

A completes the remaining work in =

$$\frac{\text{T.W}}{\text{efficiency}}$$

$$= \frac{15}{5} = 3 \text{ days}$$

206. (a)



B's one day work = 6 units

B's 10 days work = 6×10 = 60 units

Work left = 90 - 60 = 30 units

$$A \text{ does} = \frac{30}{5} = 6 \text{ days}$$

207. (c)

$$\frac{\text{(T.W)}}{6} \xrightarrow{2 \text{ units/day}} \frac{\text{(A+B)}}{3 \text{ days}}$$

2 days work of (A+B) = 2×2 = 4 units

Work left = 6-4=2 units

A completes the rest work in 2 days

So,

A's efficiency = 1 unit/day

So, B's efficiency is 2-1= 1 unit/day

B will complete the work in

$$\frac{6}{1} = 6 \text{ days}$$

**Alternate:**

One day work of (A+B) = 2 days

Work of A

$$(A+B) \times 1 = A \times 2$$

$$\frac{A+B}{A} = \frac{2}{1}$$

$$A+B = 2 \Rightarrow B=1$$

If A+B work together so, their efficiency

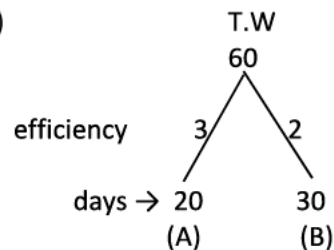
= 2 units

Then total work = Efficiency × time of

$$A+B = 2 \times 3 = 6 \text{ units}$$

$$B \text{ alone do the work} = \frac{6}{1} = 6 \text{ days}$$

208. (c)



(A+B)'s 7 days work is :

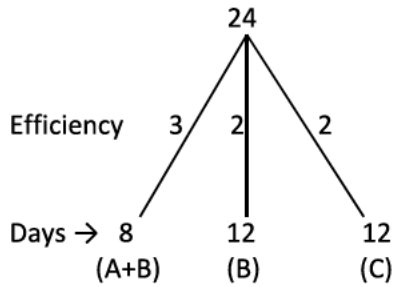
$$(3+2) \times 7 = 35 \text{ units}$$

Work left : 60-35 = 25 units

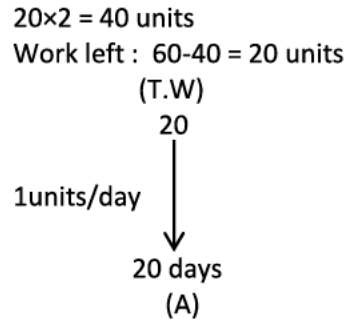
If C does 25 units of work in 10 days. It means C does 2.5 units/day



209. (d)

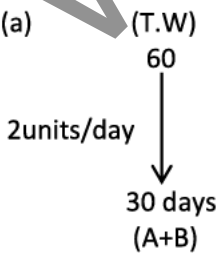


A and B work for 4 days they completed  
 $3 \times 4 = 12$  units  
 Work left =  $24 - 12 = 12$  units  
 B's 2 days work =  $2 \times 2 = 4$  units  
 Work left =  $12 - 4 = 8$  units  
 Now C's complete the work in  
 $\frac{8}{2} = 4$  days



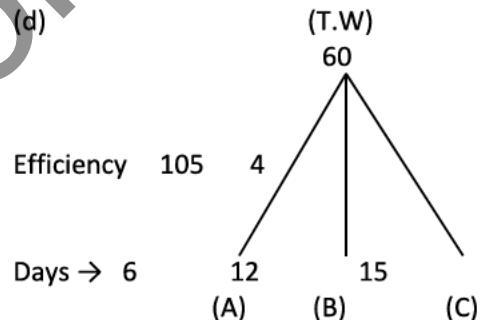
A's efficiency 1 units/day  
 A will complete the whole work in =  $\frac{T.W}{\text{efficiency}}$   
 $= \frac{60}{1} = 60$  days  
**Alternate:-**  
 $(A+B) \times 10 = A \times 20$   
 $\frac{A+B}{A} = \frac{2}{1}$   
 $T.W = 2 \times 30 = 60$  units  
 Time Taken by A alone =  $\frac{60}{1} = 60$  days

210. (a)



(A+B) worked for 20 days so, they completed

211. (d)



$\frac{1}{8}$  of work =  $\frac{60}{8} = \frac{15}{2}$  units  
 Rest work =  $60 - \frac{15}{2} = \frac{105}{2}$  units  
 Rest work completed by A+B =  $\frac{\text{rest work}}{(A+B)'s\text{eff.}}$   
 $= \frac{105}{2 \times 15} = \frac{7}{2} = 3\frac{1}{2}$  days

212. (b)  $16 \text{ women} \times 12 = 12 \text{ men} \times 8$

2 women = 1 man

Total work =  $12 \text{ men} \times 8 \text{ days} = 96$  units

16 men do work in 3 days =  $16 \times 3 = 48$  units

Work left  $96 - 48 = 48$  units

16 men - 10 men left = 6 men + 4 women join

6 men + 2 men = 8 men

8 men will do 48 units in  $\frac{48}{8} = 6$  days

213. (b) Let 'D' days required to complete the job

$$40_{\text{men}} \times 18_{\text{days}} = (40_{\text{men}} \times 8_{\text{days}}) + (50_{\text{men}} \times D)$$

$$720 - 320 = 50D$$

$$D = 8$$

6 5 4

A B C  
 A leave the work 5 days before completion and B after 2 days when A leave. So C work alone for the last three days.  $C = 4 \times 3 = 12$  unit  
 Before it (B+C) work for 2 days  $= 9 \times 2 = 18$  unit  
 Remaining  $= (60 - 30)$  unit done by (A+B+C)  
 No. Of days taken by them (A+B+C)  $\frac{30}{15} (6 + 5 + 4) = 2 \text{ days}$   
 Total days  $= 3 + 2 + 2 = 7 \text{ days}$ .

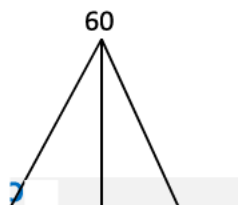
**214. (a)** 20 → 18 days  
 ⇒ Work done by 20 men working together = 1 work  
 ⇒ Work done by them in 3 days working together =  $1 \times 3 = 3$  work  
 ⇒ Remaining work  $= 18 - 3 = 15$  work  
 ⇒ 15 work is to be done by  $(20 + 5) = 25$  men  
 ∴ Efficiency of 20 men = 1  
 Efficiency of 1 men =  $1/20$   
 ⇒ Efficiency of 5 men  $= \frac{5}{20} = \frac{1}{4}$   
 ⇒ So, efficiency of  $(20 + 5)$   
 ⇒ 25 men  $= 1 + \frac{1}{4} = \frac{5}{4}$  working days  
 Required time  $= \frac{\text{work}}{\text{Efficiency}} = \frac{15}{5/4} = 12 \text{ days}$   
 Therefore, 12 more days will be taken to finish the remaining work

**Alternate:-**

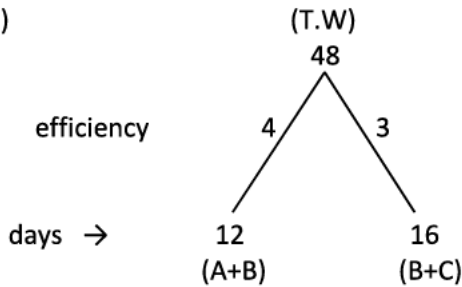
20 men can do 18 days  
 So total work  $= 18 \times 20 = 360$   
 20 men 3 days work  $= 20 \times 3 = 60$   
 Remaining work  $= 360 - 60 = 300$   
 After joining 5 men total men  $= 20 + 5$   
 So  $\frac{300}{25} = 12$  days

**216. (a)** Let total work = 40 units  
 $\xrightarrow{1 \text{ Units/day}}$   
 (T.W) 40 → 40 days (X)  
 X's 1 day work = 1 unit  
 X's 8 days work is  $8 \times 1 = 8$  units  
 Work left  $= 40 - 8 = 32$   
 Work  
 $\xrightarrow{2 \text{ units/day}}$   
 = left 32 → 16 days (Y)  
 Y's one day work = 2 units  
 X's one day work = 1 unit  
 (X+Y) can complete the whole work together in =  
 $= \frac{40}{2 + 1} = 13 \frac{1}{3} \text{ days}$

**215. (a)**

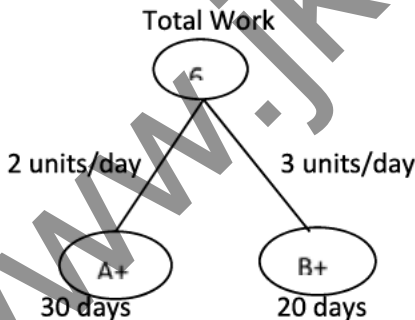


217. (a)



According to questions,  
 A worked for 5 days and  
 B worked for 7 days  
 If A and B work together for 5 days  
 they would complete  $4 \times 5 = 20$  units  
 remaining work  $= 48 - 20 = 28$  units  
 Now B has to work for 2 more days  
 and if he does it along with C for 2 days.  
 Then, both would complete  $(3 \times 2) = 6$   
 units of work  
 Work left  $= 28 - 6 = 22$  units  
 Now C completes in  $13 - 2 = 11$  days  
 So, C works  $\frac{22}{1} = 2$  unit/day  
 (efficiency)  
 And B+C does 3 units/day (efficiency)  
 So B does 1 unit/day  
 B will complete the whole work in  $\frac{48}{1} =$   
 48 days

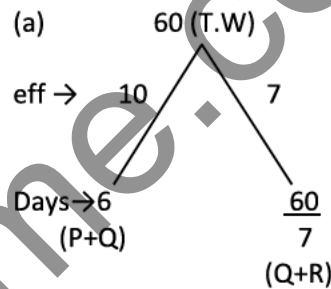
218. (d)



According to the question,  
 $\Rightarrow A+B \dots\dots\dots 30$  days  
 $\Rightarrow B+C \dots\dots\dots 20$  days  
 $\Rightarrow A \dots\dots\dots 5$   
 $\Rightarrow B \dots\dots\dots 5+10$   
 $\Rightarrow C \dots\dots\dots 10+8$  days  
 $\Rightarrow$  Work done by (A+B) in 5 days  $= 2 \times 5 = 10$   
 work  
 $\Rightarrow$  Work done by (B+C) in 5 days  $= 10 \times 3 =$   
 30 work

$\Rightarrow$  Total work .....40 work  
 $\Rightarrow$  Remaining work  $= 60 - 40 = 20$  work  
 $\Rightarrow$  Here we find that C does remaining 20  
 work in 8 days  
 $\Rightarrow$  C's efficiency  $= \frac{\text{Work}}{\text{day}}$   
 $= \frac{20 \text{ Work}}{8 \text{ Days}} = \frac{5}{2}$   
 $\Rightarrow$  C's efficiency  $= \frac{5}{2}$  work per day  
 $\Rightarrow$  Therefore, time taken by C alone to  
 complete the work  
 $= \frac{60}{\frac{5}{2}} \times 2 = 24$  days

219. (a)



(Q+R) 6 days work  $= 7 \times 6 = 42$  Units  
 $\therefore$  P Completes  $= 60 - 42 = 18$  units  
 P's eff.  $\frac{18}{3} = 6$  units/day  
 Q's eff  $= 10 - 6 = 4$  units/day  
 R's eff  $= 7 - 4 = 3$  units/day  
 P completes whole work in  $= \frac{60}{6} = 10$   
 days  
 R completes whole work in  $= \frac{60}{3} = 20$   
 days  
 Diff, is  $20 - 10 = 10$  days

220. (d) Shortest method of doing this question is :

Put in  $\frac{M_1 T_1 D_1}{W_1} = \frac{M_2 T_2 D_2}{W_2}$  formula  
 So,  
 Let no of ' burner  $\rightarrow$  'B'  
 $\frac{6b \times 6hr \times 8day}{450} = \frac{B \times 10 \times 5}{625}$   
 After solving  $\rightarrow B = 8$

221. (b)

$\frac{1w}{d(\text{effi.})}$   
 $X \longleftrightarrow 24$  units  
 24 days  
 According to the question,

X → 24 days  
 ⇒ work done by X in 4 days alone = 4×1=4units  
 ⇒ Remaining work = 24-4=20 units  
 ⇒ 20 units done by both together in (16-4 days) = 12 days  
 ⇒ Then efficiencies of (X+Y)  

$$= \frac{\text{work}}{\text{days}} = \frac{20}{12}$$

$$= \frac{5}{3} = 1 + \frac{2}{3}$$
 ⇒ efficiency of Y =  $\frac{2}{3}$   
 ⇒ Time taken by Y alone to complete the total work =  $\frac{24}{\frac{2}{3}} = 36$  days

**Alternate:**

$$X \times 20 = (x+y) \times 12$$

$$\frac{x}{x+y} = \frac{12}{20}$$

$$3 \rightarrow \text{Efficiency of } x$$

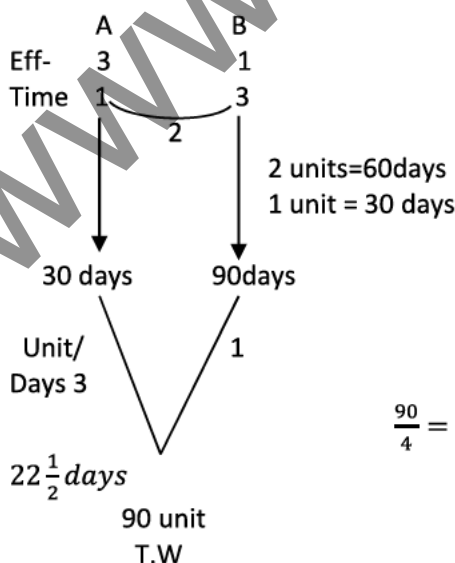
$$= \frac{5 \rightarrow \text{Efficiency of } (x+y)}{2}$$

Efficiency of y = 5-3=2 units/day  
 Total work = 24×3=72 units  
 Total time taken by 'y' =  $\frac{72}{2} = 36$  days

222. (c) Since we know efficiency and time are inversely proportion to each other.

	P	:	Q
Efficiency	3	:	4
Time	4	:	3

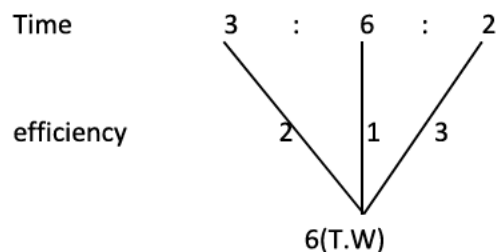
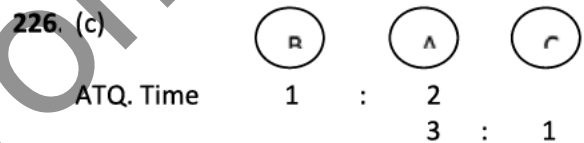
223. (b) Efficiency is always inversely proportion to time



224. (a) Ratio of time  
 A : B  $\left[ \frac{A}{B} = \frac{150\%}{100\%} = \frac{3}{2} \right]$   
 3 : 2  
 efficiency of work = 2 : 3 (Time and efficiency inversely proportion to each other)  
 Total work = 18days×(2+3) unit = 90 unit  
 B Completes the work in =  $\frac{90 \text{ units}}{3 \text{ units/day}} = 30$  days

225. (b) If their daily wages are in ratio 5 : 6 : 4 (A : B : C)  
 So wages of A for 6 days = 6 × 5 = 30  
 So wages of B for 4 days = 4 × 6 = 24  
 So wages of C for 9 days = 9 × 4 = 36  
 A : B : C      total  
 ⇒ 30 : 24 : 36      ↓  
 ⇒ 5 : 4 : 6 = 15

Amount received by A =  $\frac{5}{15} \times 1800 = \text{Rs. } 600$



One day work of A + B + C = 6 units

So, A completes whole work in

$$\frac{T.W}{\text{efficiency}} = \frac{6}{1} = 6 \text{ days}$$

227. (c)

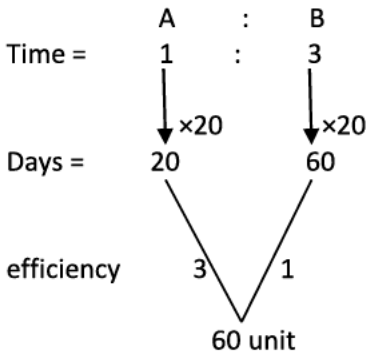
	A	:	B
efficiency (100+150)	250	:	100(A+B)
Efficiency	5	:	2=7 units/days

Total work = 15days×7units = 105  
 A can complete the whole work in =  $\frac{105}{5} = 21$  days

228. (d) According to question,

A : B  
 eff. → 3 : 1  
 time → 1 : 3  
 2 units

Difference : 2 units = 40 days  
 1 unit = 20 days



efficiency 3 : 1  
 = A+B completes in :  
 $\frac{T.W}{eff.} = \frac{60}{(3+1)} = 15days$

229. (c) According to question,

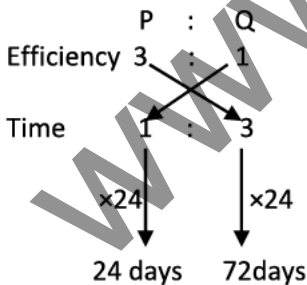
Efficiency A : B  
 2 : 1

If B does 1 unit of work A will do 2 units of work. So in a day, they will complete 3 units of work together.

Total work = 12days × 3 units/day = 36 units

B can complete the whole work alone in  
 $\Rightarrow \frac{36}{1} = 36 days$

230. (a)



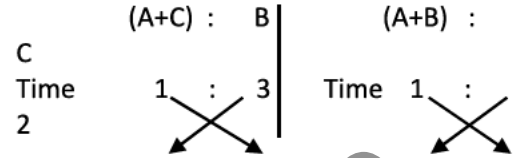
∴ 2 units → 48 days  
 1 units → 24 days

Total work = No. of days × efficiency  
 = 72 × 1 = 72

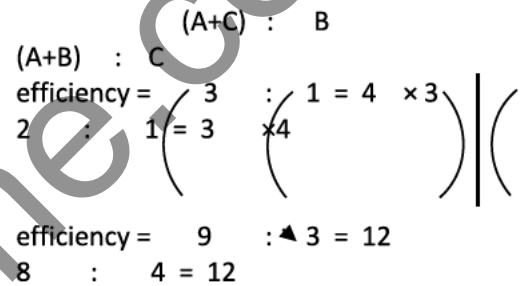
One day work of P and Q is 3+1= 4 units.  
 (P+Q) will complete the work in

$$= \frac{72}{4} = 18days$$

231. (b) According to question,



Efficiency 3 : 1 efficiency 2 :  
 1 = 3  
 Since we know, efficiency of persons will remain same.  
 So we will balance it.



Now we can see, B's efficiency is 3 units and C's is 4 units and total is 12 units.

So A's efficiency is 12 - 4 - 3 = 5 units

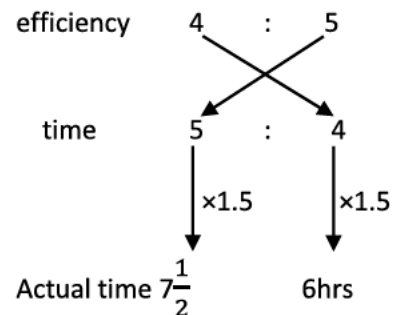
Total work = 10days × 12units

A can complete separately in

$$\frac{T.W}{efficiency\ of\ A} = \frac{120}{5} = 24\ days$$

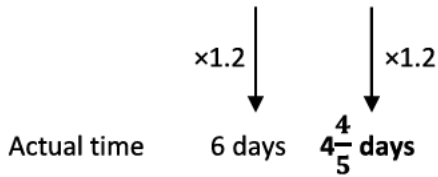
232. (c)

A : B  
 Efficiency (100-20) : 100%  
 80% : 100%

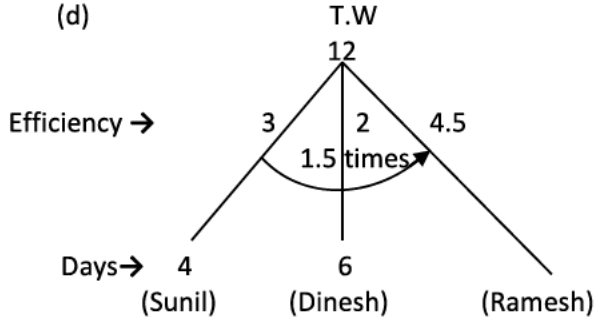


233. (a)

A : B  
 Efficiency → 100% : 125%  
 4 : 5  
 Time 5 : 4



234. (d)



One day work of sunil, Dinesh and Ramesh is

$$3 + 2 + \frac{9}{2} = \frac{19}{2} \text{ units/day}$$

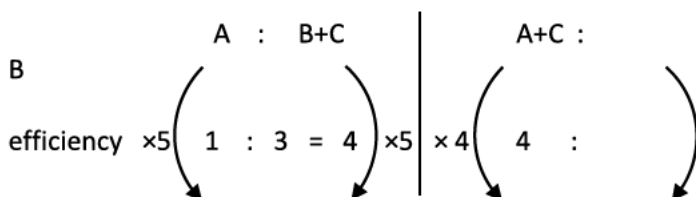
They will complete the work in

$$\frac{12}{\frac{19}{2}} = 1 \frac{5}{19} \text{ days}$$

235. (b)

A : B+C	(A+C) : B
Time 3 : 1	Time 1 : 4
Efficiency 1 : 3=4	efficiency 4 : 1=5

Since we know, efficiency of a person's will know, efficiency of a person's will remain same. So we will balance it.



$$1 = 5 \times 4$$

$$5 : 15 = 20$$

$$16 :$$

$$4 = 20$$

A's efficiency : 5 units,

B's efficiency : 4 units

Total efficiency : 20 units

So,

C's efficiency  $20 - 5 - 4 = 11$  units

Total work =  $24_{\text{days}} \times 20_{\text{units/day}}$

$\Rightarrow 480$  units.

A alone will do whole work in  $\frac{480}{5} = 96$  days

236. (a) man Woman boy

efficiency 4 : 2 : 1

total work = Time  $\times$  (Efficiency of man+woman+boy)  $\Rightarrow$

$$7_{\text{days}} \times (4+2+1) = 49 \text{ units}$$

Boy can do this work in  $= \frac{49}{1} = 49$  days

237. (b) According to the question,

$$\Rightarrow 2A = 3B$$

$$\Rightarrow \frac{A}{B} = \frac{3}{2}$$

$\Rightarrow$  Then efficiency ratio A : B = 3 : 2

$\Rightarrow$  We know that time is inverse proportional to efficiency

$\Rightarrow$  Then time taken by them in ratio

$$A : B = \frac{2}{4} : \frac{3}{12}$$

$\therefore$  A can do the work in 8 days

$\Rightarrow$  i.e. 2 units  $\rightarrow$  8

1 unit  $\rightarrow$  4

$\Rightarrow$  time taken by B  $\rightarrow$  3 unit

$$= 3 \times 4$$

$$= 12 \text{ days}$$

238. (c) A+B+C .....6 days

[6 days total work]

According to the question,

Ratio of their efficiencies,

A : B : C

6 : 3 : 2

Total efficiencies (6+3+2) unit = 11 units

Total work =  $11 \times 6 = 66$  unit

Therefore, time taken by C to complete the work

$$= \frac{\text{Total work}}{\text{Efficiencies}} = \frac{66}{2} = 33 \text{ days}$$

239. (d) Rate of regular 1h =  $\frac{2000}{50} = \text{Rs. } 40$   
 Rate of additional hours =  $1\frac{1}{2} \times 40 = \text{Rs. } 60$   
 No. of additional hours =  $\frac{2300 - 2000}{60} = 5$  hours

240. (a) According to the question,
- $$\frac{A}{B} = \frac{1}{2} \quad \left| \quad \frac{B}{C} = \frac{1}{2} \right.$$
- A : B : C
- 1 : 2
- 
- 1×2 : 2×2
- 
- 1 : 2 : 4

241. (d) eff. Of A = 3 efficiency of B

$$\begin{cases} A = 3 \\ B = 1 \end{cases}$$

$\frac{2}{5}$  th of work by (A+B) = 9 days

Total work (A+B) =  $\frac{45}{2}$  days will be completed

$$\text{Total work} = \text{days} \times \text{efficiency (A+B)}$$

$$= \frac{45}{2} \times 4 = 90$$

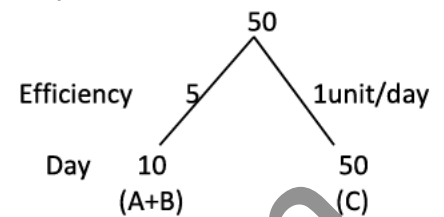
$$\text{No. of days for B} = \frac{\text{Total work}}{\text{efficiency}} =$$

$$\frac{90}{1} \text{ days}$$

242. (b) 500 workers → average wages is 200  
 Total wages =  $200 \times 500 = 100000$   
 Correct read  $80 + 220 = 300$   
 Misread  $180 + 20 = 200 + \text{Rs. } 100$  is difference between correct wages and misread wages so we will add this in 1,00,000 and then divided by 500 then we find average wages.

$$= \frac{1,00,100}{500} = 200.20$$

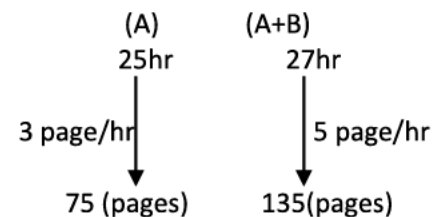
243. (c) First line clearly states that efficiency of A should be equal to combined efficiency of B and C. (A take same time as B and C together)



Total Efficiency = 6  
 efficiency of C = 1 unit/day  
 efficiency of A+B = 5 unit/day  
 so, what should be efficiency of B so that A's efficiency becomes equal to B and C's efficiency.

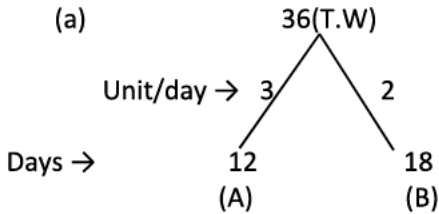
A + B & C  
 ↓ ↓ ↓ → So,  
 T.W  
 $\frac{B's \text{ efficiency}}{3 + 2 \& 1}$   
 $= \frac{50}{2} = 25 \text{ days}$

244. (c)



B's efficiency  
 = (A+B)'s efficiency - A's efficiency  
 = 5 - 3  
 = 2 pages/hr  
 B's time  
 2 page in 1 hr  
 42 page in 21 hrs

245. (a)



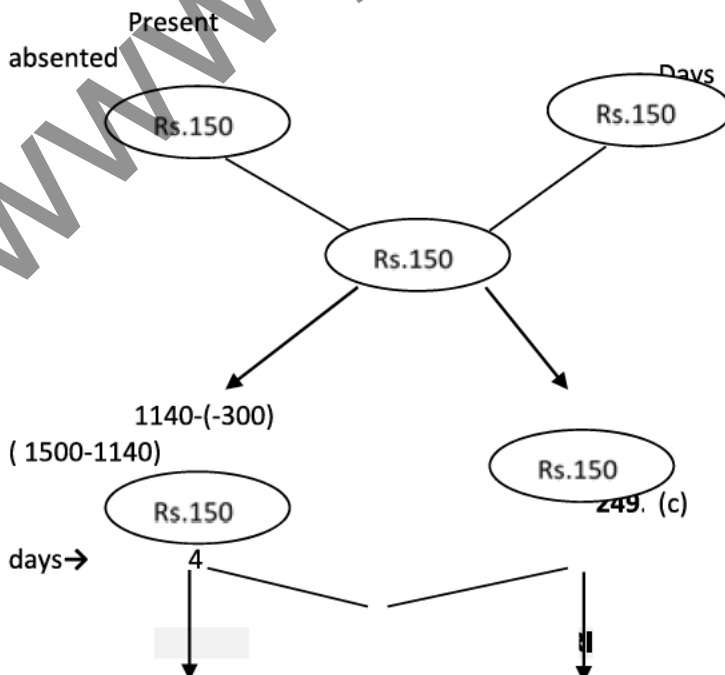
A's one day work = 3 units  
 B's one day work = 2 units  
 A starts the work and does 3 units and B does the work 2 units/days  
 They both do 5 units of work in 2 days. They both do 35 units of work in 14 days  
 (divide  $\frac{36}{5}$ , take it to closest)  
 Work left  $\Rightarrow 36 - 35 = 1$  unit,  
 Now, A's turn.

$$A \text{ complete} \Rightarrow \frac{1 \text{ unit}}{3 \text{ units/day}} = \frac{1}{3} \text{ day}$$

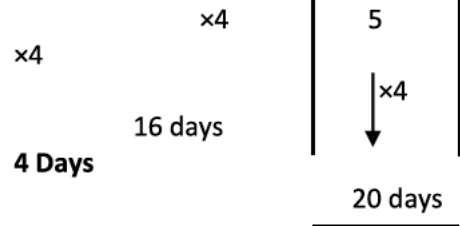
$$\text{Whole work completes in} \Rightarrow 14 + \frac{1}{3}$$

$$= 14\frac{1}{3} \text{ days}$$

246. (b) If laborer had come for 20 days he would have earned =  $20 \times 75 = 1500$   
 If laborer had absented for 20 days he would have earned fined for  $20 \times 15 = \text{Rs. } 300$



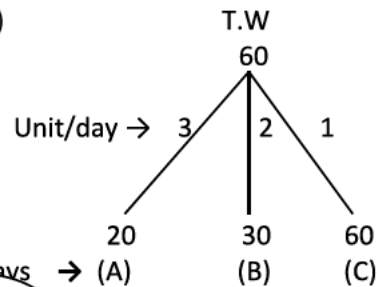
1



247.

(a) Let a man can do 1 unit/day.  
 Total work =  $40_{\text{men}} \times 40_{\text{days}} = 1600$  units  
 40 men can do the work in 10 days = 400 units  
 According to question, (5 men left after 10 days)  
 35 men can do the work in 10 days = 350 units  
 30 men can do the work in 10 days = 300 units  
 25 men can do the work in 10 days = 250 units  
 20 men can do the work in 10 days = 200 units  
 Men left  $20 - 5 = 15$  and work left =  $1600 - 1500 = 100$  units they will complete in  $\frac{100}{15} = 6\frac{2}{3}$  days  
 Total days =  $50 + 6\frac{2}{3} = 56\frac{2}{3}$  days

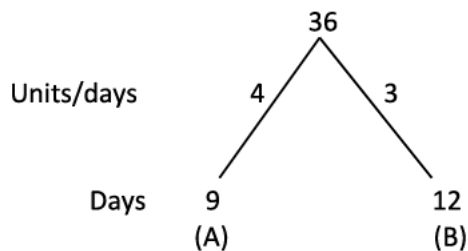
248. (c)



A will do 3 units/days.  
 (A+B+C) will do 6 units/days  
 In 3 days cycle total work done is =  $3 + 3 + 6 = 12$  units  
 Work will be completed in =  $\frac{60}{12} = 5$  cycles  
 1 cycle  $\rightarrow 3$  days  
 5 cycle  $\rightarrow 3 \times 5 = 15$  days

T.W





A's one day work = 4 units  
 B's one day work = 3 units  
 Since they work on alternate day they will do 7 units in 2 days.  
 This 2 days cycle will continue

Now,  

$$\frac{T.W}{\text{units/cycle}} = \frac{36}{7} = 5 \text{ cycle}$$

1 cycle → 2 days

5 cycle → 10 days

Now A's turn. He will do 36-35= 1 units of work

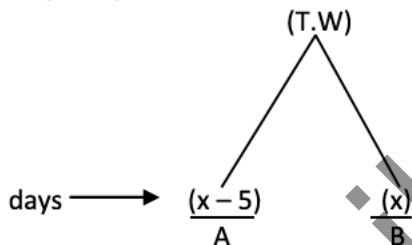
and he will take =  $\frac{1}{4}$  days

Work completed in =  $10 + \frac{1}{4} = 10\frac{1}{4}$  days

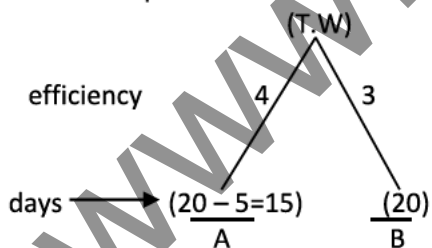
days → 20                      25  

$$\text{Total time} = \frac{100}{(5+4)} = 11\frac{1}{9} \text{ days}$$
  
 Hence, option (C) is correct

250. (c) Always, try to do these questions with the help of options to save time.

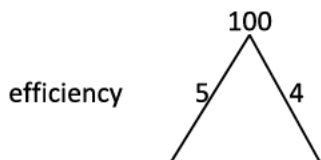


Now take option 'B' i.e. x = 20

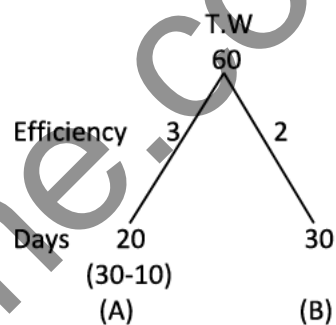


Total time =  $\frac{60}{(4+3)} = 8\frac{4}{7}$  days

This option not matched with  $11\frac{1}{9}$  days take option 'C' x = 25

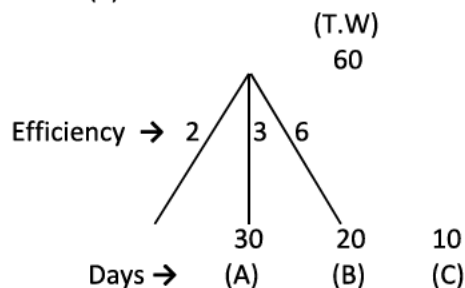


251. (a) Shortcut : take option (a)



Total time ⇒  $\frac{60}{3+2} = 12$  days  
 hence, option (a) is correct

252. (a)



First day A+B works = 2 + 3 = 5 units  
 IInd day A+C works = 2+6=8 units  
 IIIrd day A+B works = 5 units  
 In one cycle work is completed = 13 units  
 It will continue at last, work will finish in  
 $\frac{60}{13(8+5)} = 4$  cycle and  
 8 units of work is left.  
 Now, A will do with 'B' and they will complete 5 units.

Remaining 3 units will be done by A and C in  $\frac{3}{8}$  days  
 Total time = 4 cycle × 2 = 8 days  
 (A+B) = 1 days

$$A + C = \frac{3}{8} \text{ days}$$

Hence, total time  
 $= 8 \text{ days} + (A + B) + (A + C)$   
 $= 8 + 1 + \frac{3}{8}$   
 $= 9\frac{3}{8} \text{ days}$

253. (b) Dinesh's one hr. work

$$= \frac{32}{6} = \frac{16 \text{ pages}}{3 \text{ hr}}$$

Rakesh's one hr. work

$$= \frac{40}{5} = 8 \text{ pages/hr}$$

Dinesh's and Rakesh's one hr. work

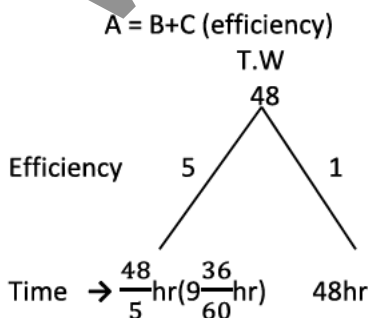
$$= \frac{16}{3} + 8 = \frac{40}{3} \text{ pages/hr}$$

They will finish the work together

$$\frac{T.W}{\text{efficiency}} = \frac{\frac{110}{40}}{\frac{40}{3}} = 8\frac{1}{4}$$

= 8hr.15min.

254. (b) According to questions,



(A+B) (C)  
 (A+B+C)'s efficiency = 6 units/day

According to question,  
 A should do half of the work alone as another half work is done by B and C together.  
 So,

$$A's \text{ efficiency} = \frac{6}{2} = 3 \text{ units}$$

$$B's \text{ efficiency} = 6 - 3 - 1 = 2 \text{ units}$$

$$B \text{ will complete whole work in } \frac{48}{2} = 24 \text{ hrs}$$

255. (d) (Let x is total time taken by A+B+C)

$$\frac{A + B + C}{x} \quad \frac{A}{x+6} \quad \frac{B}{x+1} \quad \frac{C}{2x}$$

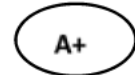
	A+B+C	C
Time	1	2
Efficiency	2	1

$$(A+B)'s \text{ efficiency} = 2 - 1 = 1$$

	A+B	C
eff.	1	1
days	2x	2x

$$\frac{A + B}{2x} = \frac{C}{2x}$$

$$A(x + 6 - 2x) = 6 - x \text{ (extra hours)}$$



$$B(x + 1 - 2x) = 1 - x \text{ (extra hours)}$$

$$2x = \sqrt{(6-x)(1-x)} = 3x^2 + 7x - 6 = 0$$

$$x = \frac{2}{3}$$

$$A \text{ alone does} = \frac{2}{3} + 6 = \frac{20}{3} \text{ hours}$$

$$B \text{ alone } \frac{2}{3} + 1 = \frac{5}{3} \text{ days}$$

$$A+B \text{ can do it in} = \frac{4}{3} \text{ hours}$$

Alternate:-

Let (A+B+C) can complete the work in x hours.

Time taken by A = (x+6) hours

B = (x+1) hours

C = 2x hours

According to the question,

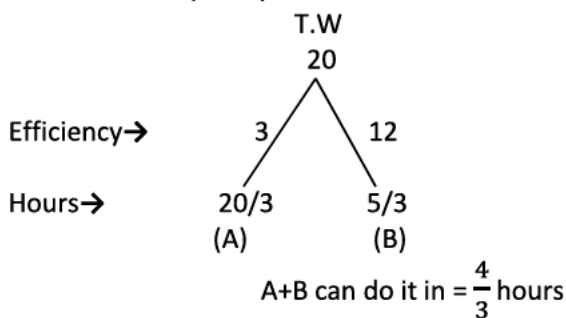
$$\frac{1}{x} = \frac{1}{x+6} + \frac{1}{x+1} + \frac{1}{2x}$$

$$\frac{1}{x} - \frac{1}{2x} = \frac{1}{x+6} + \frac{1}{x+1}$$

$$X = 2/3 \text{ hours}$$

$$A = 6 + 2/3 = 20/3 \text{ hours}$$

$$B = 1 + 2/3 = 5/3 \text{ hours}$$



259. (a)

$$R_x = \frac{80}{20} \text{ pages/hr}$$

$$= 4 \text{ p/h}$$

$$R_{(x+y)} = \frac{135 \text{ p}}{27 \text{ h}}$$

$$= 5 \text{ p/h}$$

$$R_y = R_{(x+y)} - R_x = (5 - 4)$$

$$= 1 \text{ p/h}$$

$$Y \text{ can copy 20 pages} = \frac{20 \text{ p}}{1 \text{ p/h}} = 20 \text{ h}$$

260. (b)

$$(x+4)(x+5) = (x-5)(x+20)$$

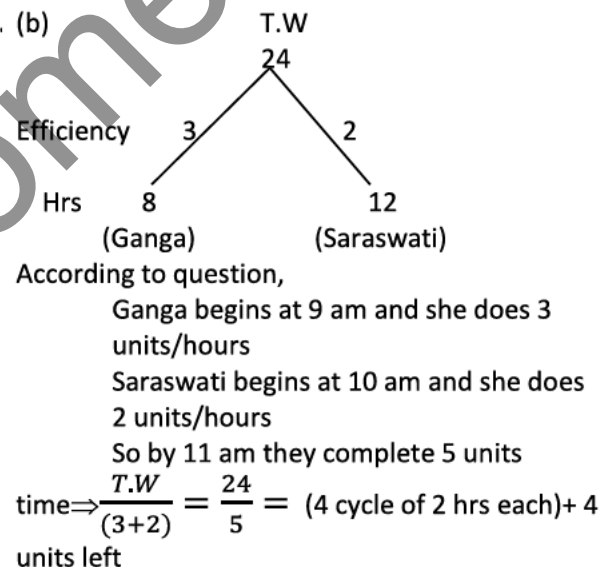
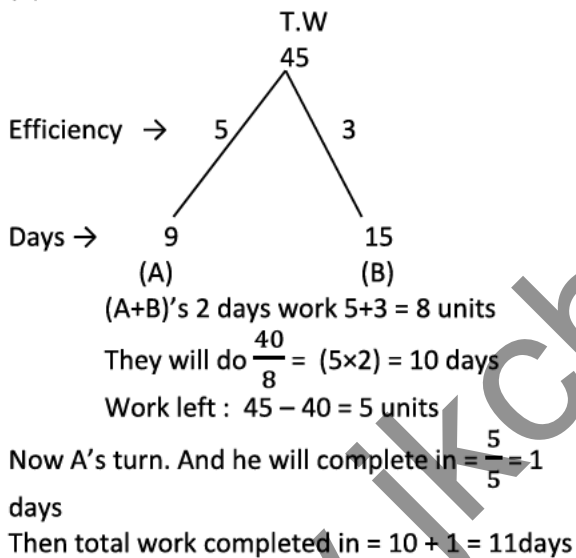
$$x^2 + 5x + 4x + 20 = x^2 + 20x - 5x - 100$$

$$9x + 20 = 15x - 100$$

$$120 = 6x$$

$$x = 20$$

261. (b)



And now Ganga will complete 3 unit out of 4 units in 1 hr

Now,

Rest 1 unit work done by Saraswati in =  $\frac{1}{2}$  hr

Total time =  $8 + 1 + \frac{1}{2} = 9\frac{1}{2}$  hr

Hence,

Work finished at = 9 am +  $9\frac{1}{2}$  hr

= 6:30 PM

262. (b) According to the question

256. (b)

257. (c) Let the required time = T

$$\Rightarrow \frac{m_1 d_1 t_1}{w_1} = \frac{m_2 d_2 t_2}{w_2}$$

$$\Rightarrow \frac{12 \times 12}{12} = \frac{4 \times \text{time}}{4}$$

$$\Rightarrow \text{time} = 12 \text{ minutes}$$

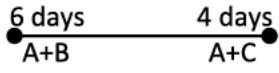
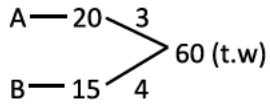
258. (d) Let a = 8 h

$$b = 4\frac{1}{2} \text{ h} = \frac{9}{2} \text{ h}$$

Time required to finish the work

$$\text{together} = \sqrt{ab}$$

$$= \sqrt{8 \times \frac{9}{2}} = 6 \text{ h}$$



$$A+B = 6 \times 7 = 72$$

$$A+C = \frac{18}{4} = 4.5$$

$$1 \text{ days of C work} = 4.5 - 4 = 1.5$$

$\therefore$  'C' finished the work

$$= \frac{60}{1.5} = 40 \text{ days}$$

263. (d) According to question

$$4m + 6w = 8 \text{ days}$$

or

$$32m + 48w = 1 \text{ days}$$

$$3m + 7w = 10 \text{ days}$$

or

$$30m + 70w = 1 \text{ days}$$

$$\therefore 32m + 48w = 30m + 70w$$

$$2m = 22w$$

$$m = 11w$$

$$4m = 44w$$

$$\therefore (44w + 6w) \times 8 = 10w \times x$$

$$50w \times 8 = 10w \times x$$

$$x = 40 \text{ days}$$

264. (b) Days      Eff.      Total work

A - 12	2	24
B - 24	1	
	3	

A and B together can finish the work =  $\frac{24}{3} = 8$  days

265. (a) Days      Eff.      Total work

A - 11	20	220
B - 55	11	
C - 55	4	
	35	

A, B & C 2 days work =  $20 + 20 + 11 + 4 = 55$

Required days =  $\frac{220}{55} \times 2 = 8$  days.



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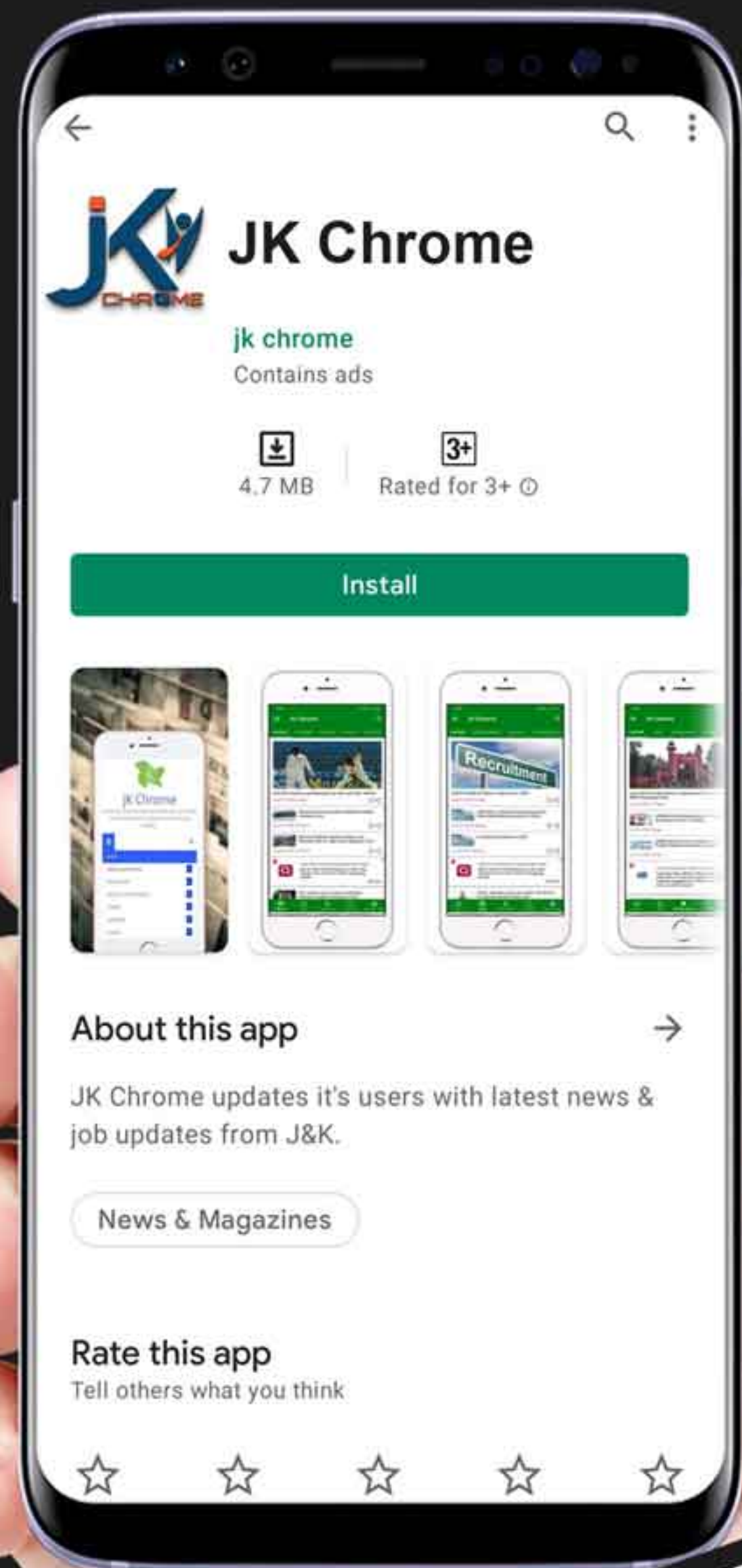
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