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Simplification

Rule-(I) Replace 'of' by 'Multiplication' & '/' by 'Division'.

Explanation: Whenever we find 'of' in a simplification problem, we can replace that by 'multiplication(*)'. Similarly '/' can be replaced by '÷'.

Example: Find $\frac{1}{4}$ of 20

Solution: $(\frac{1}{4}) \times 20 = 20 \div 4 = 5$

Rule-(II) Always keep in mind the "BODMAS" rule. These operations have priorities in the same order as mentioned.

Explanation: Whenever we have more than one operation in the given calculation, we have to do the operations according to the priority specified by 'BODMAS'

- B-Bracket
- O-Of (means multiplication)
- D-Division
- M-Multiplication
- A-Addition
- S-Subtraction

Example: Simplify: $(2+3)*30$

Solution: In this question, we have two things-Bracket & Multiplication. According to the BODMAS rule, we have to solve bracket first and not multiplication. So now coming to bracket, we have only one operation-Addition, so we will do addition.

$$(2+3)*30 = 5*30$$

Now we have only one operation to do – Multiplication

$$5*30 = 150$$

Example: Simplify: $(2+5)$ of 80

Solution: In this question, we have three things – bracket, addition & of. Replacing 'of' by 'multiplication'.

$$(2+5) \text{ of } 80 = (2+5)*80$$

Now we have three things – bracket, addition & Multiplication. According to the BODMAS rule, we have to solve bracket first and not multiplication. So now coming to bracket, we have only one operation-Addition, we will do addition.

$$(2+5)*80 = 7*80$$

Now we will do multiplication.

$$7*80 = 560$$

Rule-(III) Multiplication & Division have the same priority(Do that operation first which is on left)

Explanation: Though division has more priority than multiplication according to 'BODMAS' but we can perform any of the two operations first if multiplication is on left.

Example: 8*30/15

$$8*30 \div 15$$

Solution: In this question, we have two things – Multiplication & Division. Multiplication is on left So we can perform that first.

Doing Multiplication first:

$$240 \div 15$$

$$16$$

Doing division first:

$$8*2$$

$$16$$

Rule-(IV) Addition & Subtraction have the same priority.

Explanation: Though addition has more priority than division according to 'BODMAS' but we can perform any of the two operations first.

Example: 30+40-15

Solution: In this question, we have two things – Addition & Subtraction. So we can perform any operation first as they have same priority.

Doing Addition first:

$$70 - 15$$

$$55$$

Doing Subtraction first:

$$30 + 25$$

$$55$$

Rule-(V) Don't hesitate in rounding the numbers to nearest integers.

Explanation: Most of the times the numbers are given in such a way that you can round them quickly and get the answer (Rounding should be done or not, It can be realised by looking at the given options).

Example: $(324.5 \times 15) / (5.01 \times 24.98)$

Solution: $(325 \times 15) / (5 \times 25)$

$$= 13 \times 3$$

$$= 39$$

Some previous year questions asked in banking exams from simplification

Now let us see some of the previous year questions asked from 'Simplification' & try to apply the rules learnt so far.

Q. 1) $(17 - 13)^4 - 17^4 - 13^4 - [- 52(17)^3 - 68(13^3)] = (?) \times 221$

Using formula: $(a - b)^4 = a^4 - 4a^3b + 6a^2b^2 - 4ab^3 + b^4$

$$\Rightarrow (a - b)^4 - a^4 + 4a^3b + 4ab^3 - b^4 = + 6a^2b^2$$

$$(17 - 13)^4 - 17^4 - 13^4 - [- 52(17)^3 - 68(13^3)] = (?) \times 221$$

Here, $a = 17$ and $b = 13$

$$\Rightarrow (?) = (6 (17)^2 (13)^2) / 221$$

$$\Rightarrow (?) = (6 \times 289 \times 169) / 221$$

$$\Rightarrow (?) = 1326$$

Q.2) Simplify: $127.001 \times 7.998 + 6.05 \times 4.001$

1. 1000
2. 1020
3. 1040

4. 1080
5. None of these

Solution: Using the rounding concept

$$127 * 8 + 6 * 4$$

Using the BODMAS rule

$$1016 + 24$$

$$1040 \text{ (Option 3)}$$

Q.3) What will come at place of ?: $9876 \div 24.96 + 215.005 - ? = 309.99$

1. 270
2. 280
3. 290
4. 300
5. 310

Solution: Using the rounding concept

$$9875 \div 25 + 215 - ? = 310$$

Using the BODMAS rule

$$395 + 215 - ? = 310$$

$$610 - ? = 310$$

$$? = 300 \text{ (Option 4)}$$

Q.4) What will come at place of a: $(128 \div 16 \times a - 7*2)/(7^2-8*6+a^2) = 1$

1. 1
2. 5
3. 9
4. 13
5. 17

Solution: Using the BODMAS rule

$$(8*a - 14)/(49-48+a^2) = 1$$

$$(8a - 14)/(1 + a^2) = 1$$

$$8a - 14 = 1 + a^2$$

$$a^2 - 8a + 15 = 0$$

$$a = 3 \text{ or } 5 \text{ (Option 2)}$$

Q.5) What will come at place of ? : $85.147 + 34.192 * 6.2 + ? = 802.293$

1. 400
2. 450
3. 550
4. 600
5. 500

Solution: Using the rounding concept

$$85 + 35 * 6 + ? = 803$$

Using the BODMAS rule

$$85 + 210 + ? = 803$$

$$295 + ? = 803$$

$$? = 508 \text{ [approx. = 500] (Option 5)}$$

Q.6) What will come at place of ? : $(3/8 \text{ of } 168) * 15 \div 5 + ? = 549 \div 9 + 235$

1. 189
2. 107
3. 174
4. 296
5. None of these

Solution: Using the BODMAS rule

$$(3 * 168 \div 8) * 15 \div 5 + ? = 549 \div 9 + 235$$

$$(504 \div 8) * 3 + ? = 61 + 235$$

$$63 * 3 + ? = 296$$

$$189 + ? = 296$$

? = 107 (Option 2)

Key points to remember while solving Simplification Question:

- Replace 'of' by 'Multiplication'.
- Replace '/' by 'Division'.
- Always do the operations in priority according to 'BODMAS'.
- Division & Multiplication have the same priority (Start from left).
- Addition & Subtraction have the same priority.
- Rounding can be done to simplify problems.
- When the given options are very close then rounding doesn't help much.
- Always look at the options before doing simplification that can help in the elimination of options.

Simplification

- Simplify: $1 + \frac{1}{1 + \frac{2}{2 + \frac{3}{1 + \frac{4}{1 + \frac{5}{1}}}}}$
 (a) 28/17 (b) 15/7
 (c) 23/17 (d) 38/17
- Evaluate: $\frac{9|3-5|-5|4|+10}{-3(5)-2 \times 4+2}$
 (a) 9/10 (b) -(8/17)
 (c) -(16/19) (d) 4/7
- $45 - [4 - \{3 - (3 - 3 - 6)\}]$ is equal to :
 (a) 10 (b) 6
 (c) 4 (d) 0
- $1 - [5 - \{2 + (5 + 6 - 2)\}]$ is equal to
 (a) -4 (b) 2
 (c) 0 (d) -2
- Assume that $\sqrt{13} = 3.605$ (approximately) $\sqrt{130} = 11.40$ (approximately) find the value of: $\sqrt{1.3} + \sqrt{1300} + \sqrt{0.013}$
 $\sqrt{13} = 3.605$ $\sqrt{130} = 11.40$ $\sqrt{1.3} + \sqrt{1300} + \sqrt{0.013}$
 (a) 36.164 (b) 36.304
 (c) 37.304 (d) 37.164
- On simplification of $\frac{(2.644)^2 - (2.356)^2}{0.288}$
 (a) 1 (b) 4
 (c) 5 (d) 6
- Simplification of $\frac{(3.4567)^2 - (3.4533)^2}{0.0034}$
 (a) 0.02 (b) 0.03
 (c) 0.003 (d) 3.0
- The value of $\frac{(0.03)^2 - (0.01)^2}{0.03 - 0.01}$
 (a) 0.02 (b) 0.004
 (c) 0.4 (d) 0.04
- What is the square root of 0.09
 (a) 0.3 (b) 0.03
 (c) 0.03 (d) 3.0
- $\frac{\sqrt{0.49}}{\sqrt{0.25}} + \frac{\sqrt{0.81}}{\sqrt{0.36}}$ is equal to +
 (a) 49/10
 (c) 29/10
 (c) 9/10 (d) 99/10
- If the square root of 841 is 29, then 0.00000841 is equal to:
 (a) 0.029 (b) 0.0029
 (c) 0.00029 (d) 0.29
- The square root of a positive number less than 100 lies between:
 (a) 0 and 1000 (b) 0 and 10
 (c) -10 and 10 (d) -100 and 100
- By which smallest number should 5808 be multiplied so that it becomes a perfect square?
 (a) 2 (b) 7
 (c) 11 (d) 3
- By which smallest number 1323 must be multiplied, so that it becomes a perfect cube?
 (a) 2 (b) 3
 (c) 5 (d) 7
- On simplification $3034 - (1002 \div 20.04)$ is equal to
 (a) 3029 (b) 2984
 (c) 2993 (d) 2543
- When $(\frac{1}{2} - \frac{1}{4} + \frac{1}{5} - \frac{1}{6})$ is divided by $(\frac{2}{5} - \frac{5}{9} + \frac{3}{5} - \frac{7}{18})$ the result is
 (a) 51/10 (b) 37/18
 (c) 19/6 (d) 33/10
- $(\sqrt{72} - \sqrt{18} \div \sqrt{12})$ is equal to:
 (a) 6 (b) $\sqrt{3}/2$
 (c) $\sqrt{2}/3$ (d) $\sqrt{6}/2$
- The square root of $(272^2 - 128^2)$ is:
 (a) 256 (b) 200
 (c) 240 (d) 144
- The digit at the unit's place in the square root of 15876 is:
 (a) 8 (b) 6
 (c) 4 (d) 2
- If the sum of two numbers is 22 and sum of their squares is 404, then the product of the number is:
 (a) 40 (b) 44
 (c) 80 (d) 88
- $(5.5)^3 - (4.5)^3$ is equal to :
 (a) 1 (b) 75
 (c) 74.25 (d) 75.25
- Which of the following is a perfect square as well as a cube?
 (a) 81 (b) 125
 (c) 343 (d) 64
- When the square of a natural number subtracted from its cube, the result is 48. Find the number.
 (a) 8 (b) 6
 (c) 5 (d) 4
- Simplify: $\frac{19}{43} + \frac{1}{2 + \frac{1}{3 + \frac{1}{1 + \frac{1}{4}}}}$
 (a) 1 (b) 19/43
 (c) 49/19 (d) 38/43
- If $\frac{40}{*} = \frac{*}{12\frac{1}{2}}$ then the value of * is:
 (a) 25/2 (b) 4/25
 (c) 4 (d) 25
- Find the sum of the following: $\frac{1}{9} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72}$
 (a) 1/2 (b) 0
 (c) 1/9 (d) 1
- If $x = \frac{1}{2 + \frac{1}{2}}$ then $\frac{1}{x} = ?$
 (a) 2/5 (b) 5/2
 (c) 3/5 (d) 1/2
- The value of $\frac{5}{\frac{1}{3} \text{ of } \frac{1}{3}} \times \frac{2\frac{1}{10}}{\frac{1}{3\frac{1}{2}}}$ of $1\frac{1}{4}$
 (a) 3/2 (b) 0.05
 (c) 1 (d) 2
- $\frac{9}{20} - \left[\frac{1}{5} + \left\{ \frac{1}{4} + \left(\frac{5}{6} - \frac{1}{3} + \frac{1}{2} \right) \right\} \right]$ is equal to
 (a) 0 (b) 1
 (c) 9/20 (d) 10
- $\frac{0.83 \div 7.5}{2.321 - 0.098}$ is equal to
 (a) 0.6 (b) 0.1
 (c) 0.06 (d) 0.05
- For what value of * statement $\left[\frac{*}{21} \times \frac{*}{189} \right] = 1$ is correct?
 (a) 3969 (b) 147
 (c) 63 (d) 21
- The sum of $\sqrt{0.01} + \sqrt{0.81} + \sqrt{1.21} + \sqrt{0.0009}$
 (a) 2.1 (b) 2.13
 (c) 2.03 (d) 2.11

33. The value of $\frac{\sqrt{[(6.1)^2 + (6.1)^2 + (6.1)^2]}}{\sqrt{[(0.61)^2 + (6.11)^2 + (6.11)^2]}}$
- (a) 0.1 (b) 1.1
(c) 10 (d) 100
34. The value of $\sqrt{0.000441}$ is equal to
- (a) 0.21 (b) 0.0021
(c) 0.021 (d) 0.00021
35. The square root of $\frac{0.342 \times 0.684}{0.000342 \times 0.000171}$
- (a) 250 (b) 2500
(c) 2000 (d) 4000
36. $\sqrt{0.00060516}$ is equal to
- (a) 0.0246 (b) 0.00246
(c) 0.246 (d) 0.000246
37. If $(102)^2 = 10404$ then the value of $\sqrt{104.04} + \sqrt{1.0404} + \sqrt{0.010404}$ is equal to
- (a) 0.306 (b) 0.8306
(c) 11.122 (d) 11.322
38. If $\sqrt{4096} = 64$, then the value of $\sqrt{40.96} + \sqrt{0.4096} + \sqrt{0.004096} + \sqrt{0.00004096}$ up to two place of decimals is:
- (a) 7.09 (b) 7.10
(c) 7.11 (d) 7.12
39. Three fifth of the square of a certain number is 126.15, What is the number?
- (a) 210.25 (b) 75.69
(c) 14.5 (d) 145
40. The least number that must be subtracted from 63522 to make the result a perfect square is:
- (a) 18 (b) 20
(c) 24 (d) 30
41. By which smallest number should 20184 be multiplied so that it becomes a perfect square?
- (a) 2 (b) 3
(c) 5 (d) 6
42. If cube root of 175616 is 56, then the ${}^3\sqrt{175.616} + {}^3\sqrt{0.175616} + {}^3\sqrt{0.000175616}$ to:
- (a) 0.168 (b) 62.16
(c) 0.216 (d) 6.116
43. The simplification of $\frac{5}{3 + \frac{3}{1 - \frac{2}{3}}}$
- (a) 5 (b) 5/3
(c) 5/12 (d) 3/5
44. Find the value of $\frac{2}{1 + \frac{1}{1 - \frac{1}{2}}} \times \frac{3}{\frac{5}{6} \div \frac{3}{2} + 1\frac{1}{4}}$
- (a) 6 (b) 8
(c) 4 (d) 2
45. $\frac{3\frac{1}{4} \div \frac{4}{5} \text{ of } \frac{5}{6}}{\frac{1}{4} \div \frac{3}{5} - (\frac{3}{10} + 2\frac{1}{5})} - (1\frac{2}{3} \text{ of } 1\frac{1}{2})$ is equal to
- (a) 9 (b) 23/2
(c) 13 (d) 31/2
46. Simplify: $[3\frac{1}{4} \div \{1\frac{1}{4} - \frac{1}{2}(2\frac{1}{2} - \frac{1}{4} - \frac{1}{6})\}] \div (\frac{1}{2} \text{ of } 4\frac{1}{3})$
- (a) 18 (b) 36
(c) 39 (d) 73
47. $\frac{1}{30} + \frac{1}{42} + \frac{1}{36} + \frac{1}{72} + \frac{1}{90} + \frac{1}{110} = ?$
- (a) $\sqrt{2} \frac{2}{27}$ (b) 1/9
(c) 5/27 (d) 6/55
48. Simplify: $2\frac{3}{4} \div \frac{7}{8} \times (\frac{1}{3} + \frac{1}{4}) + \frac{5}{7} \div \frac{3}{4} \text{ of } \frac{3}{7}$
- (a) 56/77 (b) 49/88
(c) 2/3 (d) 29/9
49. The value of $\frac{0.9 \times 0.9 \times 0.9 + 0.2 \times 0.2 \times 0.2 + 0.3 \times 0.3 \times 0.3 - 3 \times 0.9 \times 0.2 \times 0.3}{0.9 \times 0.9 + 0.2 \times 0.2 + 0.3 \times 0.3 - 0.9 \times 0.2 - 0.2 \times 0.3 - 0.3 \times 0.9}$
- (a) 2.60 (b) 2.61
(c) 2.64 (d) 2.65
50. Simplify: $(0.1)^{-2} \{1 - 9(0.16)^{-2}\}$
- (a) 1/162 (b) 1/108
(c) 7696/(10)⁶ (d) 1/109
51. Simplify: $[0.9 - (2.3 - 5.2 - (7.1 - 5.4 - 3.5))]$
- (a) 9.18 (b) 1.8
(c) 0 (d) 2.6
52. $(\frac{5}{2} + \frac{3}{2})(\frac{25}{4} - \frac{15}{4} + \frac{9}{4})$ is equal to
- (a) 38 (b) 19
(c) 37 (d) 36
53. $\frac{1}{2} + \{4\frac{3}{4} - (3\frac{1}{6} - 2\frac{1}{3})\}$ is equal to
- (a) 11/3 (b) 5/4
(c) 53/12 (d) 5/3
54. The simplification $\frac{1}{8} + \frac{1}{8^2} + \frac{1}{8^3} + \frac{1}{8^4} + \frac{1}{8^5}$
- (a) 0.143 (b) 0.163
(c) 0.215 (d) 0.715
55. Simplify: $\sqrt{[(12.1)^2(8.1)^2 \div \{(0.25)^2 + (0.25)(19.95)\}]}$
- (a) 1 (b) 2
(c) 3 (d) 4
56. The Value of $\frac{(75.8)^2 - (55.8)^2}{20}$
- (a) 20 (b) 40
(c) 121.6 (d) 131.6
57. The value of $\frac{4 - \sqrt{0.04}}{4 + \sqrt{0.4}}$ (a) 0.4 (b) 0.8
(c) 1.0 (d) 1.4
58. If $\sqrt{0.00004761}$ equal to (a) 0.069 (b) 0.0069
(c) 0.00069 (d) 0.0609
59. $\frac{\sqrt{0.00001225}}{\sqrt{0.00005329}}$ is equal to (a) 25/77 (b) 35/73
(c) 35/77 (d) 25/73
60. Given that $\sqrt{574.6} = 23.97$, $\sqrt{5746} = 75.8$ then $\sqrt{0.00005746}$
- (a) 0.002397 (b) 0.0002397
(c) 0.0007580 (d) 0.00738
61. $\sqrt{[(0.798)^2 + 0.404 \times 0.798 + (0.202)^2 + 1]} = ?$
- (a) 0 (b) 2
(c) 1 (d) 0.404
62. The value of $3\sqrt{\frac{7}{875}}$
- (a) 1/3 (b) 1/15
(c) 1/4 (d) 1/5
63. $\frac{5\frac{2}{3}}{5 + \frac{1}{3 + \frac{1}{5}}}$ is equal to :
- (a) 1 (b) 1.5
(c) 2 (d) 2.5
64. $\frac{2}{2 + \frac{2}{3 + \frac{2}{2 \times 0.39}}}$ is simplified to
- (a) 1/3 (b) 2
(c) 6 (d) None of these
65. $1 + \frac{1}{1 + \frac{1}{2}}$ is equal to:
- (a) 3 (b) 3/2
(c) 2/3 (d) 5/3

66. $8.7 - [7.6 - \{6.5 - (5.4 - 4.3 - 2)\}]$ is simplified to:
 (a) 2.5 (b) 3.5
 (c) 4.5 (d) 5.5
67. The simplified value of $[(0.111)^3 + (0.222)^3 - (0.333)^3 + (0.333)^2(0.222)]^3$
 (a) 0.999 (b) 0
 (c) 0.888 (d) 0.111
68. $\frac{1\frac{1}{4} + 1\frac{1}{2}}{\frac{1}{15} + 1 - \frac{9}{10}}$ is equal to:
 (a) 3 (b) 6
 (c) 2/5 (d) 5
69. The simplification of: $(0.63 + 0.37 + 0.80)$ yield the result
 (a) 1.80 (b) 1.81
 (c) 1.79 (d) 1.80
70. $\left(\frac{(4.53-3.07)^2}{(3.07-2.15)(2.15-4.53)} + \frac{(3.07-2.15)^2}{(2.15-4.53)(4.53-3.07)} + \frac{(2.15-4.53)^2}{(4.53-3.07)(3.07-2.15)}\right)$ is simplified to:
 (a) 0 (b) 1
 (c) 2 (d) 3
71. The square root of 0.4 is:
 (a) 0.8 (b) 0.6
 (c) 0.7 (d) 0.9
72. The value of $\sqrt{32} - \sqrt{128} + \sqrt{50}$ correct to 3 places of decimal is:
 (a) 1.732 (b) 1.141
 (c) 1.414 (d) 1.441
73. $\sqrt{\frac{48.4}{0.289}}$ is equal to :
 (a) 2200/17 (b) 22/17
 (c) 220/17 (d) 205/17
74. The number, whose square is equal to the difference of the square of 75.15 and 60.12 is
 (a) 46.09 (b) 48.09
 (c) 45.09 (d) 47.09
75. The sum of the squares of two numbers is 386. If one of the number is 5, the other will be:
 (a) 18 (b) 19
 (c) 15 (d) 20
76. The sum of the cubes of the numbers 22, -15 and -7 is equal to
 (a) 6930 (b) 9630
 (c) 3 (d) 0
77. The sum of the digits of the smallest number which, when multiplied by 1800, gives a perfect cube, is
 (a) 2 (b) 3
 (c) 6 (d) 8
78. The value of $\frac{2}{3} \times \frac{3}{\frac{5}{6} \times \frac{2}{3}}$ of $\frac{1}{4}$
 (a) 2 (b) 1
 (c) 1/2 (d) 2/3
79. $\left(4\frac{11}{15} + \frac{15}{71}\right)^2 - \left(4\frac{11}{15} - \frac{15}{71}\right)^2$ is equal to:
 (a) 1 (b) 2
 (c) 3 (d) 4
80. If * represent a number, then the value of * in $5\frac{3}{*} \times 3\frac{1}{2} = 19$
 (a) 7 (b) 4
 (c) 6 (d) 2
81. $(\sqrt{2} + \frac{1}{\sqrt{2}})^2$ equal to:
 (a) 5/2 (b) 7/2
 (c) 9/2 (d) 10/1
82. The value of $\sqrt[3]{\frac{0.2 \times 0.2 \times 0.2 + 0.04 \times 0.04 \times 0.04}{0.4 \times 0.4 \times 0.4 + 0.08 \times 0.08 \times 0.08}}$
 (a) 0.5 (b) 0.25
 (c) 0.75 (d) 0.125
83. The smallest number added to 680621 to make the sum a perfect square is
 (a) 4 (b) 5
 (c) 6 (d) 8
84. The smallest positive integer when multiplied by 392, the product is a perfect square is
 (a) 6 (b) 5
 (c) 3 (d) 2
85. Which smallest number must be added to 2203 so that we get a perfect square?
 (a) 1 (b) 3
 (c) 6 (d) 8
86. The number, whose square is equal to the difference between the squares of 975 and 585, is:
 (a) 780 (b) 390
 (c) 1560 (d) 130
87. If the sum and difference of two number are 20 and 8 respectively, then the difference of their squares is:
 (a) 12 (b) 28
 (c) 80 (d) 160
88. The sum of the squares of two positive integers is 100 and the difference of their squares is 28, The sum of the numbers is:
 (a) 12 (b) 13
 (c) 14 (d) 15
89. Which smallest number must be added to 710 so that the sum is a perfect cube?
 (a) 29 (b) 19
 (c) 11 (d) 21
90. $\frac{13}{48}$ is equal to
 (a) $\frac{1}{3 + \frac{1}{1 + \frac{1}{16}}}$ (b) $\frac{1}{2 + \frac{1}{1 + \frac{1}{8}}}$
 (c) $\frac{1}{3 + \frac{1}{1 + \frac{1}{1 + \frac{1}{8}}}}$ (d) $\frac{1}{3 + \frac{1}{2 + \frac{1}{2 + \frac{1}{4}}}}$
91. The value of $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{3}}}}}$
 (a) 21/13 (b) 17/2
 (c) 34/21 (d) 8/5
92. $\frac{(3.63)^2 - (2.37)^2}{3.63 + 2.37}$ is equal to
 (a) 6 (b) 1.36
 (c) 2.26 (d) 1.26
93. The number of perfect square numbers between 50 and 1000 is:
 (a) 21 (b) 22
 (c) 23 (d) 24
94. Given that $\sqrt{24}$ is approximately equal to $4.898\frac{\sqrt{8}}{\sqrt{3}}$ is nearly equal to:
 (a) 0.544 (b) 1.333
 (c) 1.633 (d) 2.666
95. There are some boys and girls in a room. The square of the number of the girls is less than the square of

- the number of boys by 28. If there were two more girls, the number of boys would have been the same as that of the girls. The total number of the boys and girls in the room are
 (a) 56 (b) 14
 (c) 10 (d) 7
96. If the sum of the squares of three consecutive natural numbers is 110, then the smallest of these natural numbers is:
 (a) 8 (b) 6
 (c) 7 (d) 5
97. $3\sqrt{[(333)^3 + (333)^3 + (334)^3 - 3 \times 333 \times 333 \times 334]}$ to equal
 (a) 12 (b) 11
 (c) 10 (d) 15
98. The sum of the squares of 2 number is 146 and the square root of one of them is $\sqrt{5}$. The cube of the other number is
 (a) 1111 (b) 1221
 (c) 1331 (d) 1441
99. The least number, by which 1944 must be multiplied so as to make the result a perfect cube is
 (a) 2 (b) 3
 (c) 6 (d) 13
100. The smallest natural number, by which 3000 must be divided to make the quotient a perfect cube, is:
 (a) 3 (b) 4
 (c) 5 (d) 6
101. The smallest positive integer n for which $864 \times n$ is a perfect cube, is:
 (a) 1 (b) 2
 (c) 3 (d) 4
102. $\frac{\sqrt{0.081 \times 0.484}}{\sqrt{0.0064 \times 6.25}}$ is equal to:
 (a) 9 (b) 0.9
 (c) 99 (d) 0.99
103. Given that $\sqrt{13} = 3.6$ and $\sqrt{130} = 11.4$, then the value of $\sqrt{13} + \sqrt{1300} + \sqrt{0.013}$ is equal to:
 (a) 36.164 (b) 637.254
 (c) 37.714 (d) 37.154
104. If $2\sqrt{(0.014 \times 0.14x)} = 0.014 \times 0.14 \sqrt{y}$ find the value of $\frac{x}{y}$
 (a) 0.000196 (b) 0.00196
 (c) 0.0196 (d) 0.196
105. The simplified value of $\sqrt{[5 + \sqrt{\{11 + \sqrt{(19 + \sqrt{(29 + \sqrt{49})})}]}$ is:
 (a) 3 (b) 2
 (c) 4 (d) 6
106. $(0.1 \times 0.01 \times 0.01 \times 10^7)$ is equal to :
 (a) 100 (b) 1/10
 (c) 1/100 (d) 10
107. $\frac{3.25 \times 3.20 - 3.20 \times 3.05}{0.064}$ is equal to:
 (a) 1 (b) 1/2
 (c) 1/10 (d) 10
108. $\frac{\{(0.1)^2 - (0.01)^2\}}{0.0001} + 1$ is equal to
 (a) 1010 (b) 110
 (c) 101 (d) 100
109. $(0.5 \times 5 + 0.25 \times 0.5 + 0.5 \times 4 + 0.5 \times 0.75)$ is equal to
 (a) 5 (b) 10
 (c) 15 (d) 20
110. $\frac{[(5 + 5 + 5) \div 5]}{3 + 3 + 3 + 3 + 3 \div 3}$ is equal to :
 (a) 1 (b) 3/10
 (c) 4/9 (d) 2/5
111. $\frac{[(100 - 1)(100 - 2)(100 - 3) \dots (100 - 200)]}{100 \times 99 \times 98 \times \dots \times 3 \times 2 \times 1}$ is equal to:
 (a) $\frac{1}{99 \times 98 \times 97 \times \dots \times 3 \times 2 \times 1}$ (b) $\frac{1}{99 \times 98 \times 97 \times \dots \times 3 \times 2 \times 1}$
 (c) 0 (d) $-\frac{1}{99 \times 98 \times 97 \times \dots \times 3 \times 2 \times 1}$
112. $(0.9 \times 0.9 \times 0.9 + 0.1 \times 0.1 \times 0.1)$ is equal to:
 (a) 0.73 (b) 0.82
 (c) 0.91 (d) 1.00
113. $\frac{\sqrt{(0.009 \times 0.036 \times 0.016 \times 0.08)}}{\sqrt{0.002 \times 0.0008 \times 0.0002}}$ is equal to:
 (a) 34 (b) 24/25
 (c) 23/25 (d) 21/25
114. $\sqrt{1 \frac{1}{4} \times \frac{64}{125} \times 1.44}$ is equal to:
 (a) 26/25 (b) 24/25
 (c) 23/25 (d) 21/25
115. $[2\sqrt{54} - 6\sqrt{2/3} - \sqrt{96}]$ is equal to:
 (a) 0 (b) 1
 (c) 2 (d) $\sqrt{6}$
116. $\frac{\sqrt{24} + \sqrt{216}}{\sqrt{96}}$ is equal to:
 (a) $2/\sqrt{6}$ (b) $2\sqrt{6}$
 (c) $4\sqrt{6}$ (d) 2
117. $\sqrt{(100 + \frac{1}{4})}$ is equal to:
 (a) 12.0 (b) 11.5
 (c) 11.0 (d) 10.5
118. $\sqrt[3]{0.000064}$ is equal to:
 (a) 0.0002 (b) 0.002
 (c) 0.02 (d) 0.2
119. $\sqrt[3]{15612 + \sqrt{\{154 + \sqrt{225}\}}}$ is equal to (a)
 15 (b) 25
 (c) 75 (d) 125
120. $\sqrt[3]{0.000125}$ is equal to:
 (a) 0.5 (b) 0.15
 (c) 0.05 (d) 0.005
121. $(\sqrt[3]{1000} + \sqrt[3]{0.008} - \sqrt[3]{0.125})$ is equal to:
 (a) 9.7 (b) 9.97
 (c) 9.997 (d) 9.9997
122. By what least number should 675 be multiplied so as to obtain a perfect cube number ?
 (a) 3
 (c) 5
 (c) 24 (d) 40
123. The value of $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{3}}}}}$
 (a) 21/13 (b) 17/3
 (c) 34/21 (d) 8/5
124. The value of $\frac{(\frac{2^3 - 1^2}{3} - \frac{1^2}{11})}{3 + \frac{1}{3 + \frac{1}{3 + \frac{1}{3}}}}$
 (a) 38/109 (b) 109/38
 (c) 1 (d) 116/109
125. The value of $1 + \frac{1}{1 + \frac{1}{5}}$
 (a) 11/6 (b) 13/6
 (c) 15/6 (d) None of the above
126. The value of $\frac{[(3.2)^2 - 0.008]}{(3.2)^2 + 0.64 + 0.04}$
 (a) 0 (b) 2.994
 (c) 3.208 (d) 3

127. Simplify : $\frac{\frac{1}{3} + \frac{1}{4} \left(\frac{5}{3} - \frac{1}{2} \right)}{\frac{1}{3} \text{ of } \frac{3}{4} + \frac{3}{4} \text{ of } \frac{1}{5}}$
- (a) 37/78 (b) 37/13
(c) 74/78 (d) 74/13
128. $\frac{0.04}{0.03}$ of $\left[\left(\frac{3}{3} - 2 \frac{1}{2} \right) \div \frac{1}{2} \text{ of } \frac{1}{4} \right]$ $\frac{1}{\frac{1}{3} \text{ of } \frac{1}{9}}$
- (a) 1 (b) 5
(c) 1/5 (d) 1/2
129. The sum of the squares of 3 consecutive positive numbers is 365. The sum of the numbers is
- (a) 30 (b) 33
(c) 36 (d) 45
130. If the number p is 5 more than q and the sum of the squares of p and q is 55, then the product of p and q is
- (a) 10 (b) -10
(c) 15 (d) -15
131. The product of two numbers is 45 and their difference is 4. The sum of squares of the two numbers is:
- (a) 135 (b) 240
(c) 73 (d) 106
132. $\sqrt[3]{\left(1 - \frac{127}{373}\right)}$ is equal to:
- (a) 5/9 (b) 1 - 1/7
(c) 4/7 (d) 1 - 2/7
133. $\frac{0.3555 \times 0.5555 \times 2.025}{0.225 \times 1.7775 \times 0.2222}$ is equal to:
- (a) 5.4 (b) 4.58
(c) 4.5 (d) 5.45
134. The simplified value of $\sqrt{(0.25 \times 2.25)}$ is
- (a) 0.075 (b) 0.705
(c) 0.750 (d) 7.500
135. if $\sqrt{18225} = 135$, then the value of $\sqrt{18225} + \sqrt{182.25} + \sqrt{1.8225} + \sqrt{0.018225}$ is
- (a) 14.9985 (b) 149.985
(c) 1499.85 (d) 1.49985
136. The value of $\frac{\sqrt{(0.064 \times 0.256 \times 15.625)}}{\sqrt{(0.025 \times 0.625 \times 4.096)}}$
- (a) 2 (b) 2.4
(c) 0.24 (d) 4.2
137. The number of pairs of natural numbers the difference of whose squares is 45 will be
- (a) 2 (b) 3 (c) 6 (d) 5
138. If $\sqrt[3]{3^n} = 27$, then the value of n is:
- (a) 9 (b) 6
(c) 1 (d) 3
139. $\frac{\left(\frac{4}{7} - \frac{1}{2}\right)}{\frac{3}{2} + \frac{1}{7}} \div \frac{1}{2 + \frac{1}{2 + \frac{1}{5 + \frac{1}{5}}}}$ is equal to:
- (a) 1 (b) 1/2
(c) 2 (d) 1/3
140. $\frac{1}{1+2^{a-b}} + \frac{1}{1+2^{b-a}}$ is equal to
- (a) a - b (b) b - a
(c) 1 (d) 0
141. Find the sum of $\left(1 - \frac{1}{n+1}\right) + \left(1 - \frac{2}{n+1}\right) + \left(1 - \frac{3}{n+1}\right) + \dots + \left(1 - \frac{n}{n+1}\right)$
- (a) n (b) 1/2 n
(c) n + 1 (d) 1/2 (n + 1)
142. The value of $5\frac{1}{3} \div 1\frac{2}{9} \times \frac{1}{4} \left(10 + \frac{3}{1-\frac{1}{5}}\right)$
- (a) 15 (b) 67/25
(c) 128/11 (d) 128/99
143. The value of $(3 + \sqrt{8}) + \frac{1}{3-\sqrt{8}} - (6 + 4\sqrt{2})$
- (a) 8 (b) 1
(c) $\sqrt{2}$ (d) 0
144. What is the value of $\frac{\sqrt{24} + \sqrt{216}}{\sqrt{96}} = ?$
- (a) $2\sqrt{6}$ (b) $4\sqrt{6}$
(c) 2 (d) 4
145. Number of digits in the square root of 62478078 is:
- (a) 4 (b) 5
(c) 6 (d) 3
146. If $\left(n^r - tn + \frac{1}{4}\right)$ be a perfect square, then the values of t are:
- (a) ± 2 (b) 1, 2
(c) 2, 3 (d) ± 1
147. The greatest 4 digit number which is a perfect square, is
- (a) 9999 (b) 9909
(c) 9801 (d) 9081
148. What number must be added to the expression $16a^2 - 12a$ to make it a perfect square?
- (a) 9/4 (b) 11/2
(c) 13/2 (d) 16
149. The value of $\sqrt{(4^3 + 15^2)^3}$
- (a) 4913 (b) 4813
(c) 4193 (d) 3993
150. The least number which must be added to 1728 to make it a perfect square is
- (a) 36 (b) 32
(c) 38 (d) 30
151. If a = 64 and b = 289, then the value of $(\sqrt{\sqrt{a} + \sqrt{b}} - \sqrt{b-a})^{1/2}$ is
- (a) $2^{1/2}$ (b) 2
(c) 4 (d) -2
152. $\sqrt{64009}$ is equal to: (a) 352 (b) 523
(c) 253 (d) 532
153. A tourist spends daily as many rupees as the number of days of his total tour. If his total expenses were Rs. 361, then how many days did his tour last?
- (a) 17 days (b) 19 days
(c) 21 days (d) 31 days
154. The value of $\sqrt{(10^{-6} \times 0.25)}$ is
- (a) 0.00025 (b) 0.0005
(c) 0.25 (d) 0.50
155. The simplified value of: $\frac{3\sqrt{2}}{\sqrt{3} + \sqrt{6}} - \frac{4\sqrt{3}}{\sqrt{6} + \sqrt{2}} + \frac{\sqrt{6}}{\sqrt{3} + \sqrt{2}}$
- (a) $\sqrt{2}$ (b) $1/\sqrt{2}$
(c) $\sqrt{3} - \sqrt{2}$ (d) 0
156. The value of $\frac{4-\sqrt{0.04}}{4+\sqrt{0.4}}$ is close to
- (a) 0.4 (b) 0.8
(c) 1.0 (d) 1.4
157. If $\sqrt{(0.05 \times 0.5 \times a)} = 0.5 \times 0.05 \times \sqrt{b}$, then $\frac{a}{b}$ is equal to:
- (a) 0.0025 (b) 0.025
(c) 0.25 (d) 0.00025
158. If $x = \sqrt{3} + \sqrt{2}$ then the value of $x^3 - \frac{1}{x^3}$ is
- (a) $10\sqrt{2}$ (b) $14\sqrt{2}$
(c) $22\sqrt{2}$ (d) $8\sqrt{2}$
159. The value of $(1001)^3$ is

- (a) 1003003001 (b) 100303001
 (c) 100300301 (d) 103003001
160. What is the smallest number by which 625 must be divided so that the quotient is a perfect cube?
 (a) 25 (b) 5
 (c) 2 (d) 3
161. $\frac{1}{a + \frac{1}{b + \frac{1}{c + \frac{1}{2}}}} = \frac{16}{23}$ then the value of $a + b + c$ is
 (a) 3 (b) 6
 (c) 9 (d) 12
162. The sum of two numbers is $\frac{46}{3}$ and their difference is $\frac{14}{3}$, the product of the number is:
 (a) $\frac{144}{3}$ (b) 60
 (c) 50 (d) $\frac{159}{3}$
163. The value of following is: $\sqrt{12 + \sqrt{12 + \sqrt{12 + \dots}}}$
 (a) $2\sqrt{2}$ (b) $2\sqrt{3}$
 (c) 4 (d) 2
164. If $x = \sqrt[3]{(\sqrt{7} + 3)}$ then the value of $x^3 - 9x^2 + 27x - 34$ is:
 (a) 2 (b) 1
 (c) -1 (d) 0
165. The value of x in the below equation is: $0.3 + 0.6 + 0.7 + 0.8 = x$
 (a) 5.3 (b) 2.35
 (c) $\frac{8}{3}$ (d) $\frac{23}{10}$
166. Simplified value of the following expression is: $\frac{1}{\sqrt{11} - 2\sqrt{30}} - \frac{3}{\sqrt{7} - 2\sqrt{10}} - \frac{4}{\sqrt{8} + 4\sqrt{3}}$
 (a) 0 (b) 1
 (c) $\sqrt{2}$ (d) $\sqrt{3}$
167. Given $2^2 + 4^2 + 6^2 + \dots + 40^2 = 11480$, then the value of $1^2 + 2^2 + 3^2 + \dots + 20^2$ is:
 (a) 2868 (b) 2870
 (c) 2869 (d) 2867
168. The sum of 3 consecutive natural numbers divisible by 3 is 45. The smallest number is:
 (a) 12 (b) 3
 (c) 18 (d) 9

61. b 62. d 63. a
 64. d 65. d 66. c
 67. b 68. d 69. b
 70. d 71. b 72. c
 73. c 74. c 75. b
 76. a 77. c 78. a
 79. d 80. a 81. c
 82. a 83. a 84. d
 85. c 86. a 87. b
 88. c 89. b 90. d
 91. c 92. d 93. d
 94. c 95. b 96. d
 97. c 98. c 99. b
 100. a 101. b 102. d
 103. c 104. b 105. a
 106. a 107. d 108. d
 109. a 110. d 111. c
 112. a 113. b 114. b
 115. a 116. d 117. d
 118. c 119. b 120. c
 121. a 122. b 123. c
 124. a 125. a 126. d
 127. a 128. b 129. b
 130. c 131. d 132. b
 133. c 134. c 135. b
 136. a 137. b 138. a
 139. c 140. c 141. b
 142. a 143. d 144. c
 145. a 146. d 147. c
 148. a 149. a 150. a
 151. a 152. c 153. b
 154. b 155. d 156. b
 157. b 158. c 159. a
 160. b 161. b 162. d
 163. c 164. d 165. c
 166. a 167. b 168. a

1. a 2. c 3. a
 4. a 5. c 6. c
 7. a 8. d 9. a
 10. b 11. b 12. c
 13. d 14. d 15. b
 16. a 17. d 18. c
 19. b 20. a 21. d
 22. d 23. d 24. d
 25. d 26. a 27. b
 28. a 29. a 30. d
 31. c 32. b 33. c
 34. c 35. c 36. a
 37. d 38. c 39. c
 40. a 41. d 42. c
 43. c 44. d 45. c
 46. b 47. d 48. d
 49. a 50. b 51. c
 52. b 53. c 54. a
 55. d 56. d 57. b
 58. b 59. b 60. d





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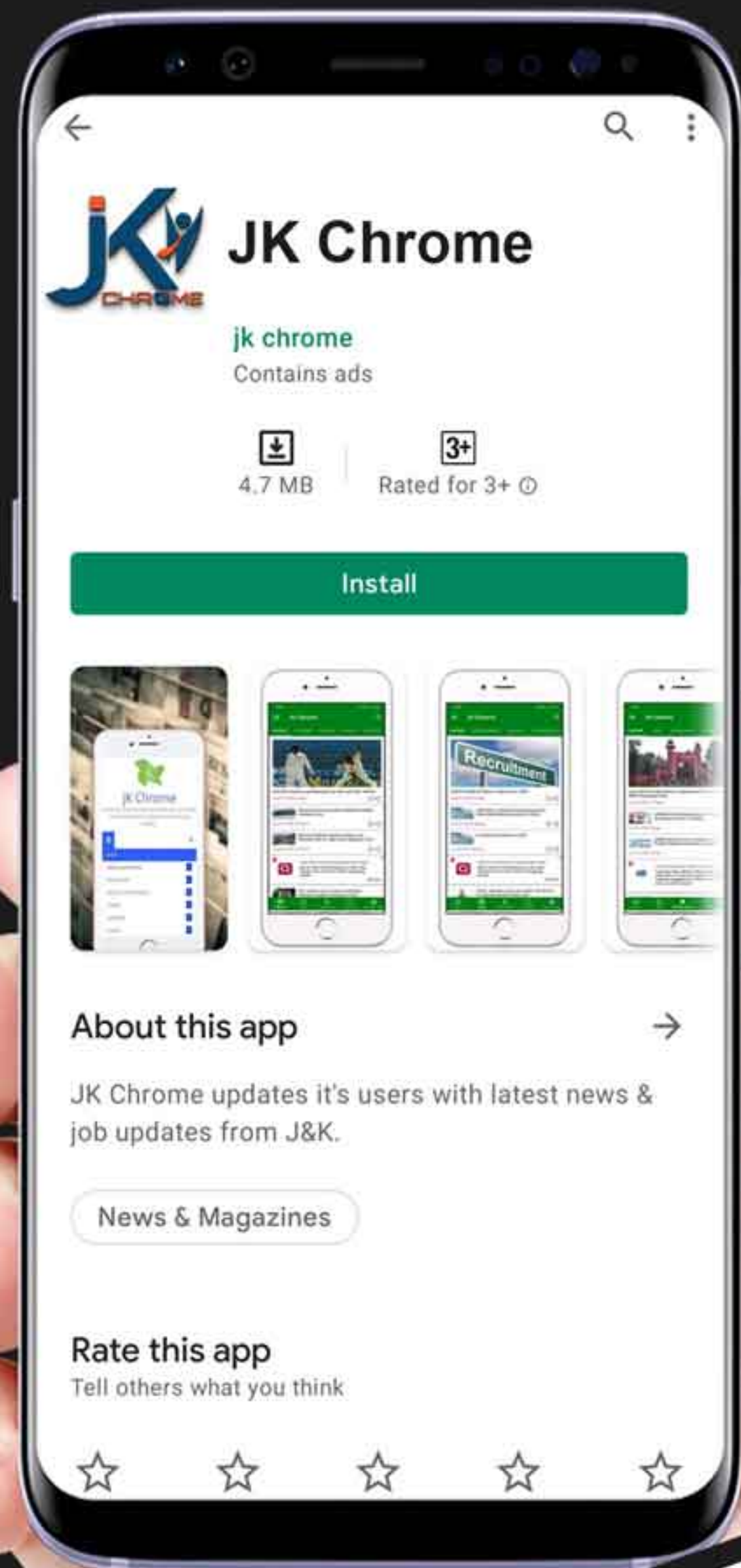
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