

BODMAS RULE

If an expression has the operators like addition (+), subtraction (−), multiplication (×), division (÷), bracket () and of (of) then the precedence of simplification of these operators is given by BODMAS rule. Here each letter of the word stands for first letter of the operator i.e. B→ Bracket, O→of, D→Division, M→ Multiplication, A→Addition and S→Subtraction.

Note: In an expression if two or more similar operators appear in succession then the precedence should be from left to right.

PROBLEMS

Directions (Q. No. 1-13): What should come in the place of question mark (?) in the following questions?

1. $7\sqrt{7} + (5)^2 + (3)^3 = (?)^2 + \sqrt{343} - 543 + 22 \times 7$

- 1) $441 + 14\sqrt{7}$ 2) $14\sqrt{7}$ 3) $12\sqrt{7}$ 4) $(21)^3$ 5) None of these

Ans: 5

Solution: $7\sqrt{7} + 25 + 27 = (?)^2 + 7\sqrt{7} - 543 + 154$

$$(?)^2 = 7\sqrt{7} + 52 - 7\sqrt{7} + 389$$

$$= 52 + 389 = 441 = (21)^2$$

$$\therefore ? = 21$$

2. $12 \times 2652 \div \sqrt{289} = (?)^3 + (12)^2$

- 1) 8 2) 14 3) 24 4) 18 5) None of these

Ans: 5

Solution: $12 \times \frac{2652}{17} = (?)^3 + 144$

$$12 \times 156 = (?)^3 + 144$$

$$(?)^3 = 1872 - 144 = 1728$$

$$? = \sqrt[3]{1728} = 12$$

3. $34.5\% \text{ of } 640 + 26\% \text{ of } 150 = ? + 189$

- 1) 70.6 2) 68.2 3) 72.8 4) 70.2 5) None of these

Ans: 5

Solution:

$$\frac{34.5}{100} \times 640 + \frac{26}{100} \times 150 = ? + 189$$

$$220.8 + 39 - 189 = ?$$

$$? = 259.8 - 189 = 70.8$$

4. $\frac{15}{11}$ of $\frac{14}{9}$ of ? = 1470

1) 678

2) 687

3) 665

4) 693

5) None of these

Ans: 4

Solution: $\frac{15}{11} \times \frac{14}{9} \times ? = 1470$ $? = \frac{1470 \times 11}{15 \times 14} \times \frac{3}{1}$

$$? = 21 \times 11 \times 3 = 693$$

5. $2\frac{1}{7} - 1\frac{3}{14} - 1\frac{1}{21} = ?$

1) 5/21

2) $-\frac{7}{42}$

3) $-\frac{5}{42}$

4) $-\frac{5}{21}$

5) None of these

Ans: 3

Solution:

$$(2 - 1 - 1) + \left(\frac{1}{7} - \frac{3}{14} - \frac{1}{21} \right) = (2 - 2) + \left(\frac{6 - 9 - 2}{42} \right) = 0 + \left(-\frac{5}{42} \right) = -\frac{5}{42}$$

6. $\sqrt{4624} \div 4 = (?)^2$

1) $\sqrt{17}$

2) 17

3) $(17)^2$

4) $\sqrt{34}$

5) None of these

Ans: 1

Solution: $\sqrt{4624} = 68$ $68 \div 4 = 17 = (?)^2$ $\therefore ? = \sqrt{17}$

7. $\left(8\frac{1}{4} \div 1\frac{3}{8} \right)^2 \div \frac{3}{5} = (?)^2$

1) $10\sqrt{10}$

2) $(100)^2$

3) $2\sqrt{15}$

4) 100

5) 10

Ans: 3

Solution: $8\frac{1}{4} \div 1\frac{3}{8} = \frac{33}{4} \div \frac{11}{8} = \frac{33}{4} \times \frac{8}{11} = 6$ $(6)^2 \div \frac{3}{5} = 36 \times \frac{5}{3} = 12 \times 5 = 60$
 $(?)^2 = 60$ $\therefore ? = \sqrt{60} = \sqrt{4 \times 15} = 2\sqrt{15}$

8. $\sqrt[3]{42875} - ? = 21$

- 1) 18 2) 13 3) 15 4) 11 5) None of these

Ans: 5

Solution: $? = \sqrt[3]{42875} - 21 = 35 - 21 = 14$

9. $\frac{57}{67} \times \frac{32}{171} \times \frac{45}{128} = ?$

- 1) $\frac{15}{262}$ 2) $\frac{15}{268}$ 3) $\frac{15}{266}$ 4) $\frac{17}{268}$ 5) None of these

Ans: 2

Solution: $\frac{57}{67} \times \frac{32}{171} \times \frac{45}{128} = \frac{15}{67 \times 4} = \frac{15}{268}$

10. $283 \times 56 + 252 = 20 \times ?$

- 1) 805 2) 803 3) 807 4) 809 5) None of these

Ans: 1

$283 \times 56 + 252 = 20 \times ? \Rightarrow 15848 + 252 = 20 \times ? \Rightarrow 16100 = 20 \times ?$

$\therefore ? = \frac{16100}{20} = 805$

11. $3800 - 22 \times 1968 \div 48 = ? \times 7$

- 1) 416 2) 418 3) 412 4) 414 5) None of these

Ans: 4

Solution: $3800 - 22 \times \frac{1968}{48} = ? \times 7$

$\Rightarrow 3800 - 22 \times 41 = ? \times 7$

$\Rightarrow 3800 - 902 = ? \times 7$

$\Rightarrow 2898 = ? \times 7$ $\therefore ? = \frac{2898}{7} = 414$

12. $1072 \times ? = (268)^2$

- 1) 65 2) 66 3) 67 4) 68 5) None of these

Ans: 3

Solution: $?\overset{67}{= \frac{268 \times 268}{1072}} = 67$

13. $864 \div ? \div 9 = 3$

- 1) 39 2) 21 3) 36 4) 27 5) None of these

Ans: 5

Solution: $\frac{864}{? \times 9} = 3 \Rightarrow ? = \frac{864}{3 \times 9} = \frac{96}{3} = 32$

14. Which number should replace both the question marks in the following equation?

$$\frac{?}{304} = \frac{19}{?}$$

- 1) 74 2) 76 3) 78 4) 82 5) 84

Ans: 2

Solution: $?^2 = 19 \times 304 \quad ? = \sqrt{19 \times 304} = \sqrt{19 \times 19 \times 16} = 19 \times 4 = 76$

15. The difference between two numbers is 43 and their product is 1344. What is the sum of the numbers?

- 1) 85 2) 88 3) 92 4) Cannot be determined 5) None of these

Ans: 1

Solution: Let p, q be the two numbers.

$$p - q = 43, pq = 1344 \quad (p + q)^2 = (p - q)^2 + 4pq \quad (p + q)^2 = (43)^2 + 4 \times 1344 \\ = 1849 + 5376 = 7225$$

$$\therefore (p + q) = \sqrt{7225} = 85$$

16. If $(16)^3$ is added to the square of a number, the answer so obtained is 5617. What is the number?

- 1) 41 2) 37 3) 43 4) 47 5) None of these

Ans: 5

Solution: $x^2 + (16)^3 = 5617, x^2 = 5617 - (16)^3 \quad x^2 = 5617 - 4096 = 1521, x = \sqrt{1521} = 39$

17. A canteen requires 56 kgs of rice for seven days. How many kgs of rice will it require for the months of April and May together?

- 1) 496 2) 480 3) 498 4) 488 5) None of these

Ans: 4

Solution: Quantity of rice for 1 day = $56/7 = 8$

Number of days for April and May together = $30 + 31 = 61$

Rice required for 61 days = $61 \times 8 = 488$

18. The product to two consecutive even numbers is 1088. Which is the larger number?

- 1) 38 2) 32 3) 36 4) 34 5) None of these

Ans: 4

Solution: Addition of 1 to the product gives a perfect square i.e. $1088 + 1 = 1089$

The square root of 1089 will be the odd number between the two consecutive even numbers.

$\sqrt{1089} = 33$, which is the odd number between 32 and 34.

\therefore 34 is the larger number.

19. If the fractions $\frac{3}{5}, \frac{2}{11}, \frac{4}{7}, \frac{1}{3}, \frac{5}{6}$ and $3/8$ are arranged in the ascending order, which

fraction will be at the 3rd place?

- 1) $1/3$ 2) $3/5$ 3) $2/11$ 4) $3/8$ 5) None of these

Ans: 4

Solution: Convert the fractions into decimal values.

$3/5 = 0.60$, $2/11 = 0.18$, $4/7 = 0.57$, $1/3 = 0.33$, $5/6 = 0.83$, $3/8 = 0.37$

Arranging them in the ascending order, 0.37 takes the 3rd place.

\therefore The fraction at 3rd place when arranged in ascending order = $3/8$