

DPP ICSE Class X MCQ

Mathematics –Ratio & Proportion

1.

Two numbers are in the ratio 7 : 9. If the sum of the numbers is 288, then the smaller number is

- (a) 126 (b) 162
(c) 112 (d) 144

2.

The ratio of number of edges of a cube to the number of its faces is

- (a) 2 : 1 (b) 1 : 2
(c) 3 : 8 (d) 8 : 3

3.

The fourth proportional to 3, 4, 5 is

- (a) 6 (b) $\frac{20}{3}$
(c) $\frac{15}{4}$ (d) $\frac{12}{5}$

4.

The third proportional to $6\frac{1}{4}$ and 5 is

- (a) 4 (b) $7\frac{1}{2}$
(c) 3 (d) none of these

5.

If a, b, c, d, e are in continued proportion, Then : $a : e$.

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

6.

If $(3x^2 + 2y^2) : (3x^2 - 2y^2) = 11 : 9$, Then the value of $\frac{3x^4 + 25y^4}{3x^4 - 25y^4}$ be

- (a) $\frac{19}{15}$ (b) $\frac{13}{19}$
(c) $\frac{19}{13}$ (d) $\frac{15}{19}$

7.

If $\frac{a+x+\sqrt{a^2-x^2}}{a+x-\sqrt{a^2-x^2}} = \frac{b}{x}$ Then $x =$

- (a) $\sqrt{2ab-b^2}$ (b) $\sqrt{2a-b}$
(c) $\sqrt{2ab+b^2}$ (d) $\sqrt{2a+b}$

8.

What number must be added to each of the numbers 15, 17, 34 and 38 to make them proportional ?

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

9.

If $x = \frac{\sqrt{a+1} + \sqrt{a-1}}{\sqrt{a+1} - \sqrt{a-1}}$,

Then $x^2 - 2ax + 1 =$

- (a) 0 (b) 1
(c) -1 (d) 2

10.

If $x = \frac{4\sqrt{6}}{\sqrt{2} + \sqrt{3}}$, Then the value of

$\frac{x+2\sqrt{2}}{x-2\sqrt{2}} + \frac{x+2\sqrt{3}}{x-2\sqrt{3}}$ be equal to

- (a) -2 (b) 0
(c) 2 (d) 1

11.

If $x = \frac{2ab}{a+b}$, Then the value of

$\frac{x+a}{x-a} + \frac{x+b}{x-b} =$

- (a) -1 (b) 0
(c) -2 (d) 2

12.

What number should be added to each of the numbers 5, 11, 19 and 37 so that they are in proportion ?

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

13.

If $k+3, k+2, 3k-7$ and $2k-3$ are in proportion, Then $k =$

- (a) 1, 5 (b) -1, -5
(c) 1, -5 (d) -1, 5

14.

When the number 210 is increased in the ratio 5 : 7, the the new number is

- (a) 150 (b) 180
(c) 294 (d) 420

15.

A ratio equivalent to the ratio $\frac{2}{3} : \frac{5}{7}$ is

- (a) 4 : 6 (b) 5 : 7
(c) 15 : 14 (d) 14 : 15

16.

If $x, 12, 8$ and 32 are in proportion, then the value of x is

- (a) 6 (b) 4
(c) 3 (d) 2

17.

The ratio of 45 minutes to $5\frac{3}{4}$ hours is

- (a) 180 : 23 (b) 3 : 23
(c) 23 : 3 (d) 6 : 23

18.

The mean proportional between $\frac{1}{2}$ and 128

- is
(a) 64 (b) 32
(c) 16 (d) 8

19.

If $\frac{x}{b+c-a} = \frac{y}{c+a-b} = \frac{z}{a+b-c}$, Then each ratio's equal to :

- (a) $\frac{x+y+z}{a+b+c}$ (b) $\frac{x-y-z}{a-b-c}$
(c) $\frac{x^2+y^2+z^2}{a^2+b^2+c^2}$ (d) None of these

20.

If $a : b = 9 : 10$, Then the value of $\frac{5a+3b}{5a-3b}$

be

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

21.

If 2, 6, p , 54 and q are in continued proportion, Then the values of p and q are :

- (a) $p = 162, q = 18$
(b) $p = 18, q = 162$
(c) $p = 9, q = 81$
(d) $p = 81, q = 9$

22.

If $(7p + 3q) : (3p - 2q) = 43 : 2$ Then $p : q$

- (a) $\frac{5}{4}$ (b) $\frac{6}{5}$
(c) $\frac{4}{5}$ (d) $\frac{5}{6}$

23.

Given that $\frac{a^3 + 3ab^2}{b^3 + 3a^2b} = \frac{63}{62}$. Using

Componendo and dividendo, find $a : b$.

- (a) $\frac{2}{3}$ (b) $\frac{4}{3}$
(c) $\frac{3}{2}$ (d) $\frac{3}{4}$

24.

If $\frac{\sqrt{36x+1} + 6\sqrt{x}}{\sqrt{36x+1} - 6\sqrt{x}} = 9$. Then $x =$

- (a) $\frac{4}{81}$ (b) $\frac{3}{81}$
(c) $\frac{1}{81}$ (d) $\frac{-4}{81}$

25.

If x, y, z are in continued proportion, find the

value of $\frac{(x+y)^2}{(y+z)^2} =$

- (a) $\frac{z}{x}$ (b) $\frac{x}{z}$
(c) $\frac{z^2}{x^2}$ (d) $\frac{x^2}{z^2}$

26.

What number should be subtracted from each of the numbers 23, 30, 57 and 78 so that the remainders are in proportion ?

- (a) 4 (b) 2
(c) 6 (d) -4

27.

The ratio of the price of coffee to that of tea, when coffee costs ₹ 24 per 100 g and the tea costs ₹ 80 per kg, is

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

28.

The number of all possible proportions from the numbers 15, 18, 35 and 42 is
(a) 1 (b) 2 (c) 3 (d) 4

29.

5. If $\frac{3k+4l+6m+7n}{3k+4l-6m-7n} = \frac{3k-4l+6m-7n}{3k-4l-6m+7n}$, then $k : 2m$ is proportional to
(a) $4l/7n$ (b) $5l/8n$ (c) $6l/7n$ (d) $4l/9n$

30.

If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{121}{125}$, then the value of $\frac{3a+4c+9e}{3b+4d+9f}$ is
(a) $120/125$ (b) $125/120$ (c) $121/125$ (d) $125/121$

31.

If $2xy$ is subtracted from the antecedent and consequent of $(x^2 + y^2) : (x^2 + y^2 + xy)$, then new ratio will be $(x^2 - y^2) : 1$. The value of $x : y$ is

- (a) $(1 + y^2) : (1 - x^2)$ (b) $(1 - y^2) : (1 + x^2)$
(c) $(1 - y^2) : (1 - x^2)$ (d) $(1 + y^2) : (1 + x^2)$

32.

If $\frac{x+y}{a^3-b^3} = \frac{y+z}{b^3-c^3} = \frac{z+x}{c^3-a^3}$, then the value of $x + y + z$ is

- (a) 1 (b) 0 (c) 2 (d) 3

33.

If a, b, c and d are in proportion, then $\frac{a^3 + 3ab^2}{3a^2b + b^3}$ is equal to

- (a) $\frac{c^3 - 3cd^2}{3c^2d + d^3}$ (b) $\frac{c^3 + 3cd^2}{3c^2d + d^3}$
(c) $\frac{3c^2d - d^3}{c^3 + 3cd^2}$ (d) $\frac{3c^2d + d^3}{c^3 + 3cd^2}$

34.

If $x = \frac{\sqrt[3]{m+1} + \sqrt[3]{m-1}}{\sqrt[3]{m+1} - \sqrt[3]{m-1}}$, then the value of $x^3 - 3mx^2 + 3x$ is

- (a) $-m$ (b) m (c) $2m$ (d) $3m$