Ratio And Proportion (LOD 01)

1. Total number of students in a class is 95. if the total number of girls in the class is 45, then the ratio of total number if boys to total number girls is

a) 9:10 b) 7:8

c) 10:9 d) 9:11

2. The ratio of money with Ram and Gopal is 7 : 17 and that with Gopal and Krishan is 7: 17. If Ram has Rs. 490, Krishan has ?

a) Rs. 2890 b) Rs. 2330

c) Rs. 1190 d) Rs. 2680

3. The prices of a scooter and a television set are in the ratio 3 : 2. If a scooter costs Rs. 6000 more than the television set, the price of the television set is ?

a) Rs. 6000 b) Rs. 10000

c) Rs. 12000 d) Rs. 18000

4. If 8 : y = y : 18 , then y is equal to ?

a) 144 b) 72

c) 26 d) 12

5. A circle and a square have same area. Therefore, the ratio of the side of the square and the radius of the circle is ?

a) $\sqrt{\pi} : 1$ b) $1 : \sqrt{\pi}$

c) $1 : \pi$ d) $\pi : 1$

6. In a class, the number of boys is more than the numbers of girls by 12% of the total strength. The ratio of boys to girls is ?

a) 11 : 14 b) 14 : 11

c) 25 : 28 d) 28 : 25

7. Three friends divided Rs. 624 among themselves in the ratio 1/2 : 1/3 :1/4. The share of the third friend is ?

a) Rs. 288 b) Rs. 192

c) Rs. 148 d) Rs. 144

8. The ratio of two number is 3 : 4 and thier sum is 420. the greater of the two numbers is ?

a) 175 b) 200

c) 240 d) 315

9. If carton containing a dozen mirrors is dropped, which of the following cannot be the ratio of broken mirrors to unbroken mirrors ?

a) 2 : 1 b) 3 : 1

c) 3 : 2 d) 7 : 5

10. Two whole numbers whose sum is 64, cannot be in the ratio ?

a) 5 : 3 b) 7 : 1

c) 3 : 4 d) 9 : 7

11. The weight of a 13 m long iron rod is 23.4 kg. The weight of 6 m long of such rod wiil be ?

a) 7.2 kg b) 12.4 kg

c) 10.8 kg d) 18 kg

12. The third propotional to 0.8 and 0.2 is ?

a) 0.4 b) 0.8

c) 0.05 d) 0.032

13. The mean proportional between 0.32 and 0.02 is ?

a) 0.34 b) 0.3

c) 0.16 d) 0.08

14. The fourth proportional to 0.2, 0.12 and 0.3 is ?

a) 0.13 b) 0.15

c) 0.18 d) 0.8

15. What number should be subtracted from each of the number 54, 71, 75 and 99 so that the remainders may be proportional ?

a) 1 b) 2

c) 3 d) 6

16. What number should be added to each one of 6, 14, 18 and 38 to make them equally proportionate ?

a) 1 b) 2

c) 3 d) 4

17. A fraction bears the same ratio to 1/27 as 3/7 does to 5/9. The fraction is ?

a) 7 / 45 b) 1 / 35

c) 45 / 7 d) 5 / 21

18. What must be added to each term of the ratio 7 : 13 so that the ratio becomes 2 : 3 ?

a) 1 b) 2

c) 3 d) 5

19. In a ratio which is equal to 5 : 8. If the antecedent is 40 then consequent is ?

a) 25 b) 64

c) 48 d) None of these

20. Out of the ratio 7 : 15, 15 : 23, 17 : 25 and 21 : 29 the smallest one is ?

a) 17 : 25 b) 7 : 15

c) 15 : 23 d) 21 : 29

21. If x : y = 2 : 1, then (x2 − y2) : (x2 + y2) is

a) 3 : 5 b) 5 : 3

c) 4 : 5 d) 5 : 6

22. If A : B = 3 : 2 and B : C = 3 : 4 then A : C is equal to

a) 1 : 2 b) 2 : 1

c) 8 : 9 d) 9 : 8

23. If a : b : c = 3 : 4 : 7, then the ratio (a + b + c) : c is equal to

a) 2 : 1 b) 14 : 3

c) 7 : 2 d) 1 : 2

24. If A : B = 2 : 3, B : C = 2 : 4 and C : D = 2 : 5, then A : D is equal to :

a) 2 : 15 b) 2 : 5

c) 1 : 5 d) 3 : 5

25. If two times of A is equal to three times of B and also equal to four times of C, then A : B : C is

a) 2 : 3 : 4 b) 3 : 4 : 2

c) 4 : 6 : 3 d) 6 : 4 : 3

26. If A : B = 2 : 3 and B : C = 4 : 5, then A : B : C is

a) 2 : 3 : 5 b) 5 : 4 : 6

c) 6 : 4 : 5 d) 8 : 12 : 15

27. If a : b : c = 7 : 3 : 5, then (a + b + c) : (2a + b – c) is equal to

a) 1 : 2 b) 2 : 3

c) 3 : 4 d) 5 : 4

28. The ratio of A to B is 4 : 5 and that of B to C is 2 : 3. If A equals 800, C equals

a) 1000 b) 1200

c) 1500 d) 2000

29. If a : b = c : d, then

ma + nc / mb + nd

is not equal to

a) a / b b) c / d

c) a + c / b + d d) c – a / b – d

30. If a : b : c = 2 : 3 : 4 and 2a –3b + 4c = 33, then the value of c is

a) 6 b) 9

c) 12 d) 66 / 7

Ratio And Proportion (LOD 01 Answer)

1. Correct Option: C

Let the total number of boys in the class be x.

Then, according to the question,

x + 45 = 95

x = 95 - 45 = 50

Hence, the required ratio of total number of boys to total number of girls = B:G = 50:45 = 10:9

2. Correct Option: A

Ram : Gopal = 7 : 17 = 49 : 119

Gopal : Krishan = 7 : 17 = 119 : 289

∴ Ram : Gopal : Krishan = 49 : 119 : 289

⇒ Ram : Krishan = 49 : 289

Thus, 49 : 289 = 490 : N

&there N = 289 x 490 / 49

= Rs. 2890

3. Correct Option: C

Let the price of a scooter be Rs. 3x and that of a television set Rs. 2x.

Then, 3x - 2x = 6000

⇒ x = 6000

∴ Cost of a television set = 2x

= Rs. 12000

4. Correct Option: D

∵ 18 x 18 = y2

∴ y = √144 = 12

5. Correct Option: A

Let the side of the square be 'a' and let the radius of the circle be 'r'

Then, a2 = πr2

⇒ a2 / r2 = π

⇒ a / r = √π

∴ a : r = √π : 1

6. Correct Option: B

Let the number of boys and girls be x and y respectively. Then

From question, (x - y) = 12% of (x + y)

⇒ x/y = 3/25 (x + y)

⇒ 25x - 25y = 3x + 3y

⇒ 22x = 28y

∴ x / y = 28 / 22 = 14 / 11

7. Correct Option: D

Ratio = 1/2 : 1/3 : 1/4 = 6 : 4 : 3

∴ share of third friend = Rs. (624 x 3/13)

= Rs. 144

8. Correct Option: C

Greater number = 420 x (4/7) = 240

9. Correct Option: C

For dividing 12 into two whole numbers, the sum of the terms of the ratio must be a factor of 12. so, they cannot be in the ratio 3 :2.

10. Correct Option: C

For dividing 64 into two whole number, the sum of the terms of the ratio must be factor of 64, so they cannot be in the ratio 3 : 4.

11. Correct Option: C

Less length, less weigth

From question, 13 : 6 : : 23.4 : W

⇒ 13 x W = 6 x 23.4

∴ W = (6 x 23.4) /13 = 10.8 kg

12. Correct Option: C

Let 0.8 : 0.2 : : 0.2 : N

Then 0.8 x N = 0.2 x 0.2

∴ N = (0.2 x 0.2) / 0.8 = 0.04 / 0.08 = 4/80 = 0.05

13. Correct Option: D

Mean proportional = √0.32 x 0.02

= √0.0064 = 0.08

14. Correct Option: C

Let 0.2 : 0.12 : : 0.3 : N

∵ 0.2 x N = 0.12 x 0.3

∴ N = (0.12 x 0.3) / 0.2 = 0.18

15. Correct Option: C

Let the required number be N,

From question, (54 - N) / (71 - N) = (75 - N) / (99 - N)

⇒ (54 - N) x (99 - N) = (75 - N) x (71 - N)

⇒ N2 - 153N + 5346 = N2 - 146N + 5325

⇒ 7N = 21 ∴ N = 3

16. Correct Option: B

Let the number be N,

From question, (6 + N) / (14 + N) = (18 + N) / (38 + N)

⇒ (6 + N) x (38 + N) = (18 + N) x (14 + N)

⇒ N2 + 44N + 228 = N2 + 32N + 252

⇒ 12N = 24

∴ N = 2

17. Correct Option: B

From question, N : 1/27 = 3/7 : 5/9

⇒ 5/9 x N = 1/27 x 3/7

⇒ 5/9 x N = 1/63

∴ N = (1/63) x (9/5) = 1/35

18. Correct Option: D

∵ (7 + N) / (13 + N) = 2/3

⇒ 3(7 +N) = 2(13 + N)

∴ N = 5

19. Correct Option: B

∵ 5 : 8 : : 40 : N

N = (40 x 8) / 5

∴ consequent N = 64

20. Correct Option: B

7 : 5 = 7/15 = 0.466

15 : 23 = 15/23 = 0.652

17 : 25 = 17/25 = 0.68

and 21 : 29 = 0.724

∴ The smallest one is 7 : 15.

21. Correct Option: A

Here, $\frac{x}{y}=\frac{2}{1}\Rightarrow\frac{x^2}{y^2}=\frac{4}{1}$

$\therefore \frac{x^2-y^2}{x^2+y^2}$

$= \frac{\frac{x^2}{y^2}-1}{\frac{x^2}{y^2}+1}$

$=\frac{4-1}{4+1}=\frac{3}{5}=3:5$

22. Correct Option: D

A : B = 3 : 2

B : C = 3 : 4

$\therefore$ A : B : C = 3 × 3 : 2 × 3 : 2 × 4 = 9 : 6 : 8

$\therefore$ A : C = 9 : 8

Second Method :

A : C = xp : yq

= 3 × 3 : 2 × 4 = 9 : 8

23. Correct Option: A

$\frac{a}{3}=\frac{b}{4}=\frac{c}{7}=k$

$\Rightarrow$ a = 3k, b = 4k and c = 7k

$\Rightarrow \frac{a+b+c}{c}=\frac{3k+4k+7k}{7k}$

$=\frac{14k}{7k}=\frac{2}{1}=2:1$

24. A : D = xpm : yqn

= 2 × 2 × 2 : 3 × 4 × 5

= 2 : 15

25. Correct Option: D

According to the question,

$2A = 3B \Rightarrow B=\frac{2}{3}A$

and $2A = 4C \Rightarrow C=\frac{1}{2}A$

$\therefore$ $A:B:C=A:\frac{2}{3}A:\frac{1}{2}A$

$=1:\frac{2}{3}:\frac{1}{2}=6:4:3$

26. Correct Option: D

A : B = 2 : 3

B : C = 4 : 5

$\therefore$ A : B : C = 2 × 4 : 3 × 4 : 3 × 5

= 8 : 12 : 15

27. Correct Option: D

a : b : c = 7 : 3 : 5

$\Rightarrow$ a /7 = b / 3 = c /5 = k (let)

$\Rightarrow$ a = 7k, b = 3k, c = 5k

Now (a + b + c) : (2a + b – c)

= (7k + 3k + 5k) : (2 ×7k +3k –5k)

= 15 k : 12 k = 5 : 4

28. Correct Option: C

A : B = 4 : 5

B : C = 2 : 3

$\therefore$ A : B : C = 4 × 2 : 5 × 2 : 5 × 3

= 8 : 10 : 15

If A equals 800, then C equals 1500.

29. Correct Option: C

a : b = c : d

$\Rightarrow \frac{a}{b}=\frac{c}{d}=\frac{ma}{mb}=\frac{nc}{nd}$

$\Rightarrow \frac{a+c}{b+d}=\frac{ma+nc}{mb+nd}$

30. Correct Option: C

a : b : c = 2 : 3 : 4

$\therefore \frac{a}{2}=\frac{b}{3}=\frac{c}{4}=$ k (let)

$\Rightarrow$ a = 2k, b = 3k, and c = 4k

Given 2a – 3b + 4c = 33

$\Rightarrow$ 2 × 2k –3×3k + 4 ×4k = 33

$\Rightarrow$ 4k –9k + 16k = 33

$\Rightarrow$ 11k = 33

$\Rightarrow$ k = 33 / 11

= 3

$\therefore$ c = 4k = 4×3 = 12