Ratio And Proportion (LOD 02)

1. The Ratio Between the rates of walking of A and B is 2: 3. If the time taken by B to cover a certain distance is 36 minutes, then time taken by A to cover that much distance is ?

a) 24min. b) 54min

c) 48min d) 21.6min

2. The sum of three numbers is 68. If the ratio between first and second be 2 : 3 and that between second and third be 5 : 3, then the second number ?

a) 30 b) 20

c) 58 d) 48

3. Three number are in the ratio 3 :4 : 5 . The sum of the largest and the smallest equals the sum of the third and 52. The smallest number is ?

a) 20 b) 27

c) 39 d) 52

4. Rs. 5625 is divided among A, B and C so that A may receive 1/2 as much as B and C together receive and B receives 1/4 of what A and C together receive. The share of A is more than that of B by ?

a) Rs. 750 b) Rs. 775

c) Rs. 1500 d) Rs. 1600

5. A certain amount was divided between Kavita and Reena in the ratio 4 : 3. If Reena's share was Rs. 2400. The amount is ?

a) Rs. 5600 b) Rs, 3200

c) Rs. 9600 d) None of these

6. A, B and C can do a work in 20, 25 and 30 days respectively. They undertook to finish the work together for Rs. 2220, then the share of A exceeds that of B by ?

a) Rs. 120 b) Rs. 180

c) Rs. 300 d) Rs. 600

7. The monthly salary of A, B, C is in the proportion of 2 : 3 : 5. If c's monthly salary is Rs. 1200 more than that of A, then B's annual salary is ?

a) Rs. 14400 b) Rs. 24000

c) Rs. 1200 d) Rs. 2000

8. A bag contains 25 paise,10 paise and 5 paise coins in the ratio 1 : 2 : 3. If their total value is Rs. 30, the number of 5 paise coins is ?

a) 50 b) 100

c) 150 d) 200

9. Two numbers are in the ratio 3 : 5. If each number is increased by 10, the ratio becomes 5 : 7. The numbers are ?

a) 3, 5 b) 7, 9

c) 13, 22 d) 15, 25

10. The ratio between Sumit's and Prakash's age at present is 2 : 3. Sumit is 6 years younger than Prakash. The ratio of Sumit's age to Prakash's age after 6 years will be ?

a) 1 : 2 b) 2 : 3

c) 3 : 4 d) 3 : 8

11. The ages of Vivek and Sumit are in the ratio 2 : 3. After 12 years, their ages wiil be in the ratio 11:15. The age of Sumit is ?

a) 32 years b) 42 years

c) 48 years d) 56 years

12. The ratio of father's age to son's age is 4 : 1. The product of their age is 196. The ratio of their ages after 5 years will be ?

a) 3 : 1 b) 10 : 3

c) 11 : 4 d) 14 : 5

13. The ratio between The ages of Kamla and Savitri is 6 : 5 and the sum of their age is 44 years.The ratio of their ages after 8 years wiil be ?

a) 5 : 6 b) 7 : 8

c) 8 : 7 d) 14 : 13

14. A father's age was 5 times his son's age 5 years ago, and will be 3 times son's age after 2 years the ratio of their present ages is ?

a) 5 : 2 b) 5 : 3

c) 10 : 3 d) 11 : 5

15. The average age of 3 girls is 20 years and their ages are in the proportion 3 : 5 : 7. the age of youngest girl is ?

a) 4 years b) 6 years 8 months

c) 8 years 3 months d) 12 years

16. A man has some hens and cows. If the number of heads be 48 and number of feet equal 140 the number of hens will be ?

a) 22 b) 23

c) 24 d) 26

17. 6 man, 8 woman, 6 children complete a job for a sum of Rs. 950. if their individuals wages are in ratio 4 : 3 : 2, the total money earned by the children is ?

a) Rs. 190 b) Rs. 195

c) Rs. 215 d) Rs. 230

18. The ratio between two numbers is 3 : 4 and their L.C.M. is 180. The first number is ?

a) 15 b) 20

c) 45 d) 60

19. In a mixture of 60 litres, the ratio of milk and water is 2 : 1. What amount of water must be added to make the ratio 1 : 2 ?

a) 42 litres b) 56 litres

c) 60 litres d) 77 litres

20. A sum of Rs. 1300 is divided between A, B and C and D such that (A's share / B's share) = (B's share / C's share) = (C's share / D's share) = 2 / 3, Then A's share is ?

a) Rs. 140 b) Rs. 160

c) Rs. 240 d) Rs. 320

21. Two equals glasses are respectively 1/3 and 1/4 full of milk. They are then filled up with water and the contents mixed in a tumbler, The ratio of milk and water in the tumbler is ?

a) 7 : 5 b) 7 : 17

c) 3 : 7 d) 11 : 23

22. If a : b = c : d then, (ma + nc) / (mb + nd) is equal to ?

a) m : n b) na : mb

c) a : b d) md : nc

23. A mixture contains milks and water in the ratio 5 : 1. On adding 5 litres of water the ratio of milk and water becomes 5 : 2. The quantity of milk in the mixture is ?

a) 16 litres b) 25 litres

c) 32.5 litres d) 22.75 litres

24. A's money is to B's money as 4 : 5 and B's money is to c's money as 2 : 3. If A has Rs. 800, C has ?

a) Rs. 1000 b) Rs. 1200

c) Rs. 1500 d) Rs. 2000

25. 15 litres of a mixture contains 20% alcohol and the rest water. If 3 litres of water be mixed in it. The percentage of alcohol in the new mixture will be ?

a) 17 b) 16 2/ 3

c) 18 1/ 2 d) 15

26. Vinay got thrice as many marks in Maths as in English. The proportion of this marks in Maths and History is 4 : 3. If his total marks in Maths, English And History are 250. What are his marks in English ?

a) 120 b) 90

c) 40 d) 80

27. Gold is 19 times as heavy as water and copper 9 times as heavy as water. The ratio in which these two metals be mixed so that the mixture is 15 times as heavy as water is ?

a) 1 : 2 b) 2 : 3

c) 3 : 2 d) 19 : 135

28. Divide Rs. 600 among A, B and C so that Rs. 40 more than 2/5th of A's share,Rs. 20 more than 2/7th of B's share and Rs. 10 more than 9/17th of C's share may all be equal. What is A's share ?

a) Rs. 280 b) Rs. 150

c) Rs. 170 d) Rs. 200

29. 729 ml of a mixture contains milk and water in the ratio 7 : 2. How much more water is to be added to get a new mixture containing milk and water in the ratio of 7 :3 ?

a) 60 ml b) 70 ml

c) 81 ml d) 90 ml

30. A and B are two alloys of gold and copper prepared by mixing metals in proportions 7 : 2 and 7 : 11 respectively. If equal quantities of the alloys are melted to from a third alloy C, the proportion of gold and copper in C will be ?

a) 5 : 9 b) 5 : 7

c) 7 : 5 d) 9 : 5

Ratio And Proportion (LOD 02 Answer)

1. Correct Option: B

Ratio of times taken = 1/2: 1/3

1/2 : 1/3 = y : 36

1/3y = 1/2 x 36

y=54 min

2. Correct Option: A

Let the 3 numbers are a, b, c.

Then, a/b = 2/3, b/c = 5/3

⇒ a/b = (2 x 5) / (3 x 5) = 10/15

and b/c = (5 x 3)/(3 x 3) = 15/9

⇒ a : b : c = 10 : 15 : 9

Let the number be 10y, 15y and 9y.

Then, 10y + 15y + 9y = 68

⇒ 34y = 68

⇒ y = 2

∴ Second number = 15y

= 15 x 2 = 30.

3. Correct Option: C

Let the numbers be 3N, 4N and 5N.

Then, 5N + 3N = 4N + 52

⇒ 4N = 52

⇒ N = 13

∴ Then smallest number = 3N = 3 x13 = 39.

4. Correct Option: A

∵ A = (B + C)/2

⇒ B + C = 2 A

⇒ A + B + C = 3A

Thus 3A = 5625

⇒ A = Rs. 1875

Again B = (A + C)/4

⇒ A + C = 4B

⇒ A + B + C = 5B

∴ 5B = 5625

∴ B = Rs. 1125

Thus A's share is more than that of B by Rs. (1875-1125) I.e. Rs. 750.

5. Correct Option: A

Let their shares be Rs. 4x and Rs. 3x.

Then 3x = 2400

⇒ x = 800

∴ Total amount = 7x = Rs. 5600

6. Correct Option: B

Ratio of shares of A, B and C = 1/20 : 1/25 : 1/30 = 15 : 12 : 10

∴ A's share = Rs.(2220 x 15/37) = Rs. 900

B's share = Rs.(2220 x 12/37) =Rs. 720

Thus, the share of A exceeds that of B by Rs.(900 - 720) = Rs. 180.

7. Correct Option: A

Let the monthly salary of A, B, C be Rs. 2x, Rs.3x and Rs. 5x respectively.

Then, 5x - 2x = 1200

∴ x = 400

∴ B's monthly salary = 3x = Rs. 1200

Hence, B's annual salary = Rs. (12 x 1200)= Rs. 14400

8. Correct Option: C

Ratio of their values = 1/4 : 2/10 : 3/20 = 5 : 4 : 3

∴ Value of 5 paise coins =Rs. (30 x 3/12) = Rs. 7.50

∴ Number of 5 paise coins = 750/5 = 150

9. Correct Option: D

Let the number be 3a and 5a

Then, (3a + 10) / (5a + 10) = 5/7

∴ 7(3a + 10) = 5 x (5a + 10)

∴ 4a = 20

∴ a = 5

So, the number are 15, 25.

10. Correct Option: C

Let their ages be 2x and 3x years.

∴ 3x - 2x = 6

∴ x = 6

∴ Sumit's age = 12 years, Prakash's age = 18 years

After 6 years, Sumit's age = 18 years

After 6 Years, prakash's age = 24 years

∴ Required ratio of their ages = 18 : 24 = 3 : 4

11. Correct Option: C

Let their ages be 2x and 3x years

(2x + 12) / (3x + 12) = 11 /15

⇒ 15(2x + 12) = 11(3x + 12)

⇒ 3x = 48

∴ x = 16

∴ age of sumit = 3x = 48 years

12. Correct Option: C

Let their ages be 4x and x years.

∵ 4x2 = 196

∴ x2 = 49

⇒ x = 7

Their ages are 28 years and 7 years.

Ratio of their ages be after 5 years = 33 : 12

= 11 : 4.

13. Correct Option: C

Let their ages be 4x and x years.

∵ 6x + 5x = 44

∴ x = 4

So their present ages are 24 years and 20 years

Ratio of their ages after 8 years = 32 : 28 = 8 : 7.

14. Correct Option: C

Let son's age 5 years ago = x years.

Then father's age at that time = 5x years.

After 2 years, son's age = (x + 7) years.

After 2 years, father's age = (5x + 5)

∵ 3(x + 7) = 5x + 7

∴ x = 7

Father's age now = (5x + 5) = 40 years

son's age now = (x+5) = 12 years

∴ Ratio of their present ages = 40 : 12 = 10 : 3

15. Correct Option: D

Their total age = (3 x 20) yeras = 60 years

Let their ages be 3x, 5x and 7x years.

Then 3x + 5x + 7x = 60

⇒ x = 4

∴ yongest girl is = 3x = 12 years old.

16. Correct Option: D

Let the numbers of hens = x and number of cows = y

Then x + y = 48 and 2x + 4y = 140

Solving these equations, we get 2y = 44

∴ y = 22

So, x = (48 - 22) = 26

∴ Number of hens = 26.

17. Correct Option: A

Ratio of wages of 6 men, 8 women and 6 = (6 x 4) : (8 x 3) : (6 x 2) = 24: 24 : 12

= 2 : 2 : 1

∴ Total money earned by children = Rs. (950 x 1/5)

= Rs. 190

18. Correct Option: C

Let the numbers be 3x and 4x

Then, their L.C.M. = 12x

⇒ 12x = 180

∴ x = 15

Hence, the first number = 45

19. Correct Option: C

Milk = 60 x (2/3) litres =40 litres

Water = (60 - 40) litres = 20 litres

∵ 40 / (20 + x) = 1/2

⇒ 20 + x = 80

∴ x = 60

Hence water to be added = 60 litres.

20. Correct Option: B

∵ A : B = 2 : 3, B : C = 2 : 3 and C:D = 2 : 3

⇒ A : B = 8 : 12, B : C = 12 : 18 and C : D = 18 : 27

∴ A : B : C : D =8 : 12 : 18 : 27

So A's share = Rs. 1300 x (8 / 65) = Rs. 160

21. Correct Option: B

First glass contains milk = 1/3 and water = 2/3

Second glass contains milk = 1/4 and water = 3/4

∴ Now tumbler contains water = (3/2 + 3/4) = 17/12

∴ Ratio of milk and water =7/12 : 17/12 =7 : 17

22. Correct Option: C

Let (a/b) = (c/d) = k

Then, a = bk and c = dk.

∴ (ma + nc) / (mb + nd) = (mbk + ndk) / (mb + nd) = k(mb + nd/mb + nd)

= k = a/b = a : b.

23. Correct Option: B

Let quantity of milk and water be 5x and x litres.

Then, 5x / (x + 5) = 5/2

∴ 10x = 5x + 25

∴ x =5

∴ Quantity of milk = 5x =25 litres

24. Correct Option: C

A : B = 4 : 5 = 8 : 10 and B : C = 2 : 3 = 10 : 15

∴ A : B : C = 8 : 10 :15

If A has Rs. 8, C has Rs. 15

If A has Rs. 800 C has Rs. (15/8 x 100) = Rs. 1500

25. Correct Option: B

Alcohol = (20/100) x 15 litres = 3 litres,

Water = 12 litres

New mix, contains,

Alcohol = 3 litres, Water = 15 litres

∴ Percentage of alcohol in new mix. = (3/18) x 100 % = 162/ 3%

26. Correct Option: C

M = 3E and M/H = 4/3

∴ H = 3/4 M = 3/4 x 3E = 9/4 E

Now M + E + H = 250

⇒ 3E + E + 9/4 E = 250

⇒ 25 E = 1000

∴ E = 40

27. Correct Option: C

Let, 1 gm of gold be mixed with y gm of copper to give (1 + y) gm of mixture.

Now, 1G =19W and 1C = 9W and mixture = 15W

Now, 1 gm gold + y gm copper = (1 + y) gm mixture

∵ 19 W + 9W x y = (1 + y) x 15W

Thus 4W = 6W x y

∴ y = 4W/6W = 4/6 = 2/3

So the required ratio is 1 : 2/3 i.e. 3 : 2

28. Correct Option: B

∵ 2A/5 + 40 = 2B/7 + 20 = 9C/17 + 10 = k

∴ A = 5(k - 40)/2, B =7(k - 20)/2 and C

= 17(k - 10)/9

⇒ 5(k - 40)/2 +7(k - 20)/2 +17/(k - 10)/9 = 600

⇒ 45k - 1800 + 63k - 1260 + 34k - 340 = 10800

⇒ 142k = 14200

∴ k = 14200 / 142 = 100

Hence A's share = (5/2) x (100 - 40) = Rs. 150

29. Correct Option: C

Milk = (729 x 7/9) = 567 ml

Water = (729 x 2/9) = 162 ml

Let water to be added is w

∵ 567 / (162 + w) = 7/3

⇒ 3 x 567 - 7 x 162 = 7 x w

⇒ 1701 - 1134 = 7 x w

∴ 7w = 1701 - 1134

∴ w = 567/7 = 81 ml

30. Correct Option: C

Gold in C =(7/9 + 7/18) = 21/18 = 7/6

Copper in C = (2/9 + 11/18) = 15/18 = 5/6

∴ Gold : Copper = 7/6 : 5/6 = 7 : 5