WORKSHEET ON RATIO PROPORTIONS & VARIATIONS

1. The ratio of a and b is 1:2. The ratio of b and c is 2:3. What is the ratio of a and c?

2. The ratio of a and b is 1:2. The ratio of c and b is 4:3. The ratio of c and d is 1:3. What is a:d?

3. If 1, X, 2 and 6 are in continued proportion, find X.

4. The mean proportional value of 9 and 16 is _____.

5. The ratio of the number of chocolates with A and B is 3:4. If A has 12 chocolates, how many chocolates do A and B have together?

6. The ratio of two positive integers is 1:2. If 5 is added to the first number, the ratio becomes 2:3. Find the two numbers.

7. Divide Rs. 60 in the ratio 1:2 between A and B.

8. The ratio of A:B is 2:3. If B is increased by 10, then the ratio becomes 2:5. Find increased value of B.

9. The ratio of A:B is 2:3. If B is decreased by 20, then the ratio becomes 1:1. Find the original value of B.

10. The ratio of a certain number of cooks to the number of waiters is 3:13. When 12 more waiters are hired, the ratio of the number of cooks to the number of waiters becomes 3:17. How many cooks are there?

11. In a mixture of 100 litres, the ratio of milk and water is 2:3. If this ratio is to become 1:2, then what quantity of water (in litres) is to be added to the mixture?

12. The ratio of the amounts with two people A and B is 1:2. If B gives Rs.100 to A, the ratio becomes 2:3. Find the amount with B after the transaction.

13. The ratio of copper and zinc in an alloy is 13:7. How much zinc (in kg) will be present in 100 kg of alloy?

14. 30 kg of an alloy A is mixed with 50 kg of alloy B. If alloy A has lead and tin in the ratio 3:2 and alloy B has tin and copper in the ratio 1:4, then the amount of tin in the new alloy (in kg) is

a. 20 **b.** 22 **c.** 24 **d.** 15

15. The monthly salary of A,B and C are in the ratio 5:4:9. If C's monthly salary is Rs.2000 more than that of A's salary, then what is the salary of B (in Rs)?

a. 2,000 **b.** 4,000 **c.** 5,000 **d.** 9,000

16. A sum of money is distributed among A,B,C and D in the proportion 1:2:3:4. If D gets Rs.9000 more than A, what is B's share (in Rs)?

a. 2,000 **b.** 5,000 **c.** 6,000 **d.** 4,000

17. The ratio of the income of A and B is 7:6 and the ratio of their expenditure is 5:4. If at the end of the year, each saves Rs.2000, then the income of B (in Rs) is

a. 3000 **b.** 2500 **c.** 4500 **d.** 6000

18. The ratio of the incomes of A and B is 3:2 and the ratio of their expenditure is 5:3. If at the end of the year, each saves Rs.3000, then the expenditure of A is

a. 18000 **b.** 9000 **c.** 15000 **d.** 6000

19. It was intended that a sum of Rs.117 be divided among Chetan, Peter and Reeta in the ratio 4:3:2. But due to a mistake the distribution was made in the ratio 1/4:1/3:1/2. How much does Reeta gain by the error?

a. 26 **b.** 54 **c.** 28 **d.** None

20. The sum of three numbers is 63. Ratio of the first two numbers is same as the ratio of the second and the third number. If the second number is two times the first number, find the third number.

a. 32 **b.** 36 **c.** 40 **d.** 48

21. A and B are two alloys of gold and copper prepared by mixing the metals in the ratio 4:3 and 5:9 respectively. If equal quantities of these alloys are melted to form a third alloy C, then the ratio of gold and copper in C will be

a. 5:7 **b.** 13:15 **c.** 15:13 **d.** None

22. A and B are two alloys of gold and copper prepared by mixing the metals in the ratio 4:3 and 17:4 respectively. If equal quantities of these alloys are melted to form a third alloy C, then the ratio of gold and copper in C will be

a. 29:13 **b.** 21:7 **c.** 7:21 **d.** 13:29

23. A and B are two alloys of gold and copper prepared by mixing the metals in the ratio 4:5 and 13:5 respectively. If A and B are mixed in the ratio 2:3 to form a third alloy C, then the ratio of gold and copper in C will be

a. 11:8 **b.** 11:7 **c.** 7:5 **d.** 4:5

24. 3 containers contain zinc and copper in the ratio 2:5, 1:4, 2:3 respectively. All 3 solutions are mixed in the ratio 1:3:4. Then find the ratio of zinc and copper in the resultant solution.

a. 85: 173 **b.** 89:201 **c.** 87:193 **d.** 67:125

25. Three Jars contain alcohol to water in the ratios 3:7, 1:9 and 9:1. If equal quantities of all the three solutions are mixed, what will be the ratio of alcohol to water in final solution?

a. 13:17 **b.** 17:13 **c.** 1:2 **d.** 3:4

26. If there are Rs. 495 in a bag in denominations of one-rupee, 50-paisa and 25-paisa coins which are in the ratio 1:8:16. How many 50 paisa coins are there in bag?

a. 440 **b.** 55 **c.** 880 **d.** 600

27. Three Jars contain alcohol to water in the ratios 3:7, 1:3 and 1:1. If all the three solutions are mixed, what will be the ratio of alcohol to water in final solution?

28. Two tanks of similar volume are full of a mixture of oil and water. In the first, the ratio of oil and water is 5:8 and in the second, it is 7:19. If both these tanks are poured in a larger tank, what would be the resultant ratio of oil and water?

29. The ratio of a two-digit natural number to a number formed by reversing its digits is 4:7. How many such pairs are possible?

30. In a mixture of 35 L, the ratio of milk to water is 4:1. If 7 L water is added to the mixture, the ratio of milk to water changes to a new ratio. If we want ratio of milk and water to change back to the original value, how much milk (in litres) is to be added now?