

# 18PDM301L – Analytical and Logical Thinking Skills

## Worksheet - RATIO PROPORTION AND VARIATION

1. A book has 320 pages. The fifth chapter runs from page 261 to page 272. The ratio of the number of pages of this chapter to the total number of pages of the book is  
A) 11 : 320    B) 3 : 40    C) 3 : 80    D) 272 : 320
2. In a box, the ratio of red balls to blue balls is 7:4. Which of the following could be the total number of balls in the box?  
A) 18    B) 19    C) 21    D) 22
3. Sachin's total score in Maths and English is 150. If one third of the score in Maths is equal to half of the score in English, find his score in Maths.  
A) 40    B) 60    C) 53    D) 90
4. The sum of three numbers is 147. If the ratio of the first to second is 2 : 3 and that of the second to the third is 5 : 8, then the second number is:  
A) 30    B) 45    C) 72    D) 81
5. Seats for Mathematics, Physics and Biology in a school are in the ratio 5:7:8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats ?  
A) 1:2:3    B) 2:3:4    C) 3:4:5    D) 4:5:6
6. A, B, C have Rs. 1,300 in the ratio  $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ . Find the amount with A?  
A) 650    B) 300    C) 400    D) 600
7. The number of chocolates with A and B are in the ratio 3:5. If A gets 8 chocolates from his mother, the ratio becomes 4:5. Find the number of chocolates that A & B had initially.  
A) 24, 40    B) 32, 40    C) 20, 40    D) None of these
8. A father had Rs 83,000. He divided the share among his three sons, such that four times the share of the first son, five times the share of the second son and seven times the share of the third son are equal. Find the amount with the first son.  
A) Rs 40,000    B) Rs 35,000    C) Rs 50,000    D) Can't be determined
9. The ratio of ages of two brothers is 3:4. After ten years, what will the ratio of their ages be?  
A) 1: 3    B) 1: 2    C) 2: 3    D) 4: 5
10. The ages of 3 brothers are in continued proportion. If the second brother's age is 12 and the ages of the other two differ by 7, what is the age of the oldest brother?  
A) 16    B) 12    C) 18    D) 24
11. The mean proportional between 64 and 16 is  
A) 36    B) 32    C) 48    D) 40

12. What should be added to each of 3, 15, 38 and 134 so that they should become proportionate to each other?

- A) 1                      B) 2                      C) 3                      D) 4

13. A bag has Rs 216 in the form of one rupee, 50 paise and 25 paise coins in the ratio of 2:3:4. The number of 50 paise coins is

- A) 96                      B) 144                      C) 114                      D) 141

14. In a farm there are hens and cows. The total number of eyes is 100. The legs of the hens and cows are in the ratio of 3:4. Find the number of hens.

- A) 20                      B) 40                      C) 50                      D) 30

15. If the ratio of areas of two squares is 1075:688, then what is the ratio of the perimeters?

- A) 4:5                      B) 5:3                      C) 5:2                      D) 5:4

16. Five glasses of equal volume have milk in the ratio 3:4:5:6:7. If the total amount of milk in the five glasses is 50% of the total capacity of the five glasses, then in how many glasses are 40% full of milk?

- A) 2                      B) 3                      C) 4                      D) 5

17. The ratio of green balls to red balls in a bag is 3:2. If 10 white balls are added to them, then the ratio of white, green and red balls becomes 5:6:4. How many green balls are there in the bag?

- A) 8                      B) 5                      C) 6                      D) 12

18. There are some monkeys on two trees A and B. If 4 monkeys jump from tree A to tree B then the ratio of number of monkeys on tree A and tree B is 2:5. If 2 monkeys jump from tree B to tree A then the number of monkeys on tree A and tree B are equal. How many monkeys are there on tree B?

- A) 16                      B) 18                      C) 14                      D) 20

19. An amount of Rs 2,430 is divided among three people A, B and C such that if their shares be reduced by Rs 5, Rs 10 and Rs 15 respectively, the balance amounts with them would be in ratio of 3:4:5. What is B's share?

- A) Rs 605                      B) Rs 709                      C) Rs 800                      D) Rs 810

20. Some of the students in a college auditorium are dressed in white while the others are dressed in blue. The ratio of the number of boys dressed in white to the number of girls dressed in blue is 4:3 and the ratio of the number of girls dressed in white to the number of boys dressed in blue is 4:5. The ratio of the number of boys and girls dressed in white to the number of boys and girls dressed in blue is 12:13. What is the ratio of the total number of boys to that of girls in the auditorium?

- A) 13:15                      B) 19:17                      C) 14:11                      D) Cannot be determined

21. The cost of a precious stone varies as the cube of its weight. The stone broke into three pieces whose weights are in the ratio 1:2:3. As a result its cost reduces. If the cost of the unbroken stone is Rs 96,336, what is the loss incurred due to breakage?

- A) Rs 80,280                      B) Rs 16,056                      C) Rs 40,140                      D) Rs 8,028

22. The compounded ratio of (2 : 3), (6: 11) and (11 :2) is

- A) 1:2                      B) 2:1                      C) 11:24                      D) 36:121

23. If  $(a/b) = (c/d) = (e/f) = (2/3)$  then find the value of  $(2a^2-3c^2+4e^2) / (2b^2-3d^2+4f^2)$

- A) 3:5                      B) 2:3                      C) 4:9                      D) 4:5

24. If  $(a^3+3ab^2) / (3a^2b+b^3) = (234 / 109)$  then find a / b

- A) 7:5                      B) 5:7                      C) 1:6                      D) 6:1

25. 11. The value of a precious stone varies directly as square of its weight. One such stone is broken into pieces with weights in the ratio of 2:3:4. If the loss due to breakage is Rs. 26,000, what was the price of the original stone?

- A) Rs 81,000                      B) Rs 40,500                      C) Rs 29,000                      D) Rs 52,000