

Ratio proportions, Average, Alligation & mixture, Data interpretation

Q1. The income of A and B are in the ratio 6:5 and their expenditures are in the ratio 5:3. If each saves \$3,500 then what is the income of B?

- (a) \$ 3000 (b) \$ 4000 (c) \$ 5000 (d) \$ 6000

Q2. In a group of 8 boys, 2 men aged at 21 and 23 were replaced, two new boys. Due to this the average cost of the group increased by 2 years. What is the average age of the 2 new boys?

- (a) 17 (b) 30 (c) 28 (d) 23

Q3. In a cricket match there are three types of tickets say A, B and C each costing Rs. 1000, Rs. 500 and Rs. 200 respectively. The ratio of the number of tickets sold of category A, B and C is 3 : 2 : 5. If the total collection from selling the tickets is Rs. 2.5 crore. Find the total number of tickets sold.

- (a) 40000 (b) 45000 (c) 50000 (d) 60000

Q4. The average age of 30 boys in a class is equal to 14 years. When the age of the class teacher is included the average becomes 15 years. Find the age of the class teacher?

- (a) 45 (b) 42 (c) 50 (d) 44

Q5. What will be the ratio of petrol and kerosene in the final solution formed by mixing petrol and kerosene that are present in three identical vessels in the ratio 4:1, 5:2 and 6 : 1 respectively?

- (a) 166 : 22 (b) 83 : 22 (c) 83 : 44 (d) 78 : 55 (e) None of these

Q6. Raja gives 30% of his salary to his mother, 40% of the remaining salary he invests in an insurance scheme and PPF in the respective ratio of 4 : 3 and the remaining he keeps in his bank account. If the difference between the amount he gives to his mother and that he invests in insurance scheme is Rs. 8400, how much is Raja's salary?

- (a) Rs. 60,000 (b) Rs. 62,000 (c) Rs. 64,000 (d) Rs. 65,000 (e) Rs. 54,000

Q7. The average age of a man and his son is 28 years. The ratio of their ages is 3 : 1 respectively. What is the man's age?

- (a) 44 (b) 42 (c) 38 (d) 30

Q8. While calculating the weight of a group of men, the weight of 63 kg of one of the members was mistakenly written as 83 kg. Due to this the average of the weights increased by half kg. What is the number of men in the group?

- (a) 25 (b) 20 (c) 40 (d) 60

Q9. Eight years ago, Pranathi's age was equal to the sum of the present ages of her one son and one daughter. Five years hence, the respective ratio between the ages of her daughter and her son will be 7:6. If Pranathi's husband is 7 years elder to her and his present age is three times the present age of their son, what is the present age of the daughter?

- (a) 19 years (b) 27 years (c) 15 years (d) 23 years

Q10. A shopkeeper bought 30kg of rice at Rs.75 per kg and 20 kg of rice at the rate of Rs.70. per kg.If he mixed the two brands of rice and sold the mixture at Rs.80 per kg. Find his gain.

- (a) Rs.350 (c) Rs.550 (d) Rs.420 (d) Rs.210

Q11. 144 liters of the mixture contains milk and water in the ratio 5: 7. How much milk needs to be added to this mixture so that the new ratio is 23: 21 respectively?

- (a) 42 Liters (b) 32 Liters (c) 46 Liters (d) 40 Liters

Q12. The respective ratio between the present age of Mani and Dheeraj is $x : 42$. Mani is 8 years younger than Murali. Murali's age after 8 years will be 33 years. The difference between Dheeraj's and Mani's age is same as the present age of Murali. What is the value of x ?

- (a) 18 (b) 10 (c) 16 (d) 17

Q13. The average weight of 40 Students is 32. If the Heaviest and Lightest are excluded the average weight reduces by 1. If only the Heaviest is excluded then the average is 31. Then what is the weight of the Lightest?

- (a) 30 (b) 31 (c) 32 (d) 33

Q14. The ratio of the ages of Anil and his son at present is $7 : 3$. Six years hence, the ratio of the ages of the Anil's wife and the son will be $2 : 1$. Find the ratio of the present ages of Anil and his wife?

- A. $6 : 5$ B. $4 : 3$ C. $5 : 4$ D. Cannot be determined E. None of these

Q15. Shas married 8 year ago. Today her age is $\frac{9}{7}$ times to that time of marriage. At present his son's age is $\frac{1}{6}$ th of her age. What was her son's age 3 year ago?

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

Q16. An alloy contains Brass, Iron, and Zinc in the ratio $2:3:1$ and another contains Iron, zinc, and lead in the ratio $5:4:3$. If equal weights of both alloys are melted together to form a third alloy, then what will be the weight of lead per kg in new alloy?

- (a) $\frac{1}{4}$ (b) $\frac{41}{7}$ (c) $\frac{1}{8}$ (d) $\frac{51}{9}$

Q17. The captain of a cricket team of 11 members is 26 years old and the wicket keeper is 3 years older. If the ages of these two are excluded, the average age of the remaining players is one year less than the average age of the whole team. What is the average age of the team?

- (a) 23 years (b) 24 years (c) 25 years (d) None of these

Q18. 64 boys and 40 girls form a group for social work. During their membership drive, same number of boys and girls joined the group. How many members does the group have now, if the ratio of boys to girls is $4 : 3$?

- (a) 150 (b) 172 (c) 136 (d) 164 (e) None of these

Q19. A Jar contains 100 liters of Milk a thief stole 10 liters of Milk and replaced it with water. Next, he stole 20 liters of Milk and replaced it with water. Again he stole 25 liters of Milk and replaced with water. Then what is the quantity of water in the final mixture?

- (a) 55 Liters (b) 54 Liters (c) 50 Liters (d) 46 Liters

Q20. There are 459 students in a hostel. If the number of students increased by 36, the expenses of the mess increased by Rs .81 Per day while the average expenditure per head reduced by 1. Find the original expenditure of the mess?

- (a) 7304 (b) 7314 (c) 7334 (d) 7344

Q21. The ratio of investments of A and B is 8 : 7 and the ratio of their year end profits is 20 : 21 . If B invested for 12 months, then find the period of investment of A:

- (a) 6 months (b) 8 months (c) 10 months (d) 12 months

Q22. The total cost of 8 buckets and 5 mugs is Rs. 92 and the total cost of 5 buckets and 8 mugs is Rs. 77. Find the cost of 2 mugs and 3 buckets.

- (a) Rs. 35 (b) Rs. 70 (c) Rs. 30 (d) Rs. 38

Q23. The average age of husband, wife and their child 3 years ago was 27 years and that of wife and the child 5 years ago was 20 years. The present age of the husband is:

- (a) 35 years (b) 40 years (c) 50 years (d) None of these

Q24. Rani mixes 70kg of sugar worth Rs.28.50 per kg with 100kg of sugar worth Rs.30.50 per kg. At what rate shall he sell the mixture to gain 10 %?

- (a) Rs.29.75 (b) Rs.32.64 (c) Rs.31.50 (d) Rs.30.46

Q25. How much water must be added to a bucket which contains 40 liters of milk at the cost price of Rs.3.50 per liter so that the cost of milk reduces to Rs.2 per liter?

- (a) 25 litres (b) 28 litres (c) 30 litres (d) 35 litres

Q26. What must be added to each term of the ratio 2 : 5 so that it may equal to 5 : 6?

- (a) 12 (b)13 (c) 65 (d)78

Q27. A, B and C enter into a partnership in the ratio $\frac{7}{2} : \frac{4}{3} : \frac{6}{5}$. After 4 months, A increases his share 50%. If the total profit at the end of one year be Rs. 21,600, then B's share in the profit is:

- (a) Rs. 2100 (b) Rs. 2400 (c) Rs. 3600 (d) Rs. 4000

Q28. A sum of Rs. 1360 has been divided among A, B and C such that A gets $\frac{2}{3}$ of what B gets and B gets $\frac{1}{4}$ of what C gets. B's share is:

- (a) Rs. 120 (b) Rs. 160 (c) Rs. 240 (d) Rs. 300

Q29. The average age of a husband and his wife was 23 years at the time of their marriage. After five years they have a one year old child. The average age of the family now is

- (a) 17 years (b) 19 years (c) 23 years (d) 28 years

Q30. On a particular day, sweets were to be equally distributed among 960 students of a school. However, on that particular day 360 students remained absent, Hence each student present on that day got three sweets extra. Had all 960 students remained present that day, how many sweets would each, student have got?

- (a) 3 (b) 5 (c) 7 (d) 8

Q31. A restaurant prepares 22 litres of a mixture that contains 25% of orange essence and the remaining quantity as water. If 3 litres of a water is mixed in this mixture, what will be the percentage of orange essence in the new mixture?

- (a) 34% (b) 4% (c) 12% (d) 22%

Directions for questions (32-35): The following table gives the percentage distribution of population of five states, P, Q, R, S and T on the basis of poverty line and also on the basis of sex.

State	Percentage of Population below the Poverty Line	Proportion of Males and Females	
		Below Poverty Line	Above Poverty Line
		M : F	M : F
P	35	5 : 6	6 : 7
Q	25	3 : 5	4 : 5
R	24	1 : 2	2 : 3
S	19	3 : 2	4 : 3
T	15	5 : 3	3 : 2

Q32. If the male population above poverty line for State R is 1.9 million, then the total population of State R is?

- (a) 4.5 million (b) 4.85 million (c) 5.35 million (d) 6.25 million

Q33. What will be the number of females above the poverty line in the State S if it is known that the population of State S is 7 million?

- (a) 3 million (b) 2.43 million (c) 1.33 million (d) 5.7 million

Q34. What will be the male population above poverty line for State P if the female population below poverty line for State P is 2.1 million?

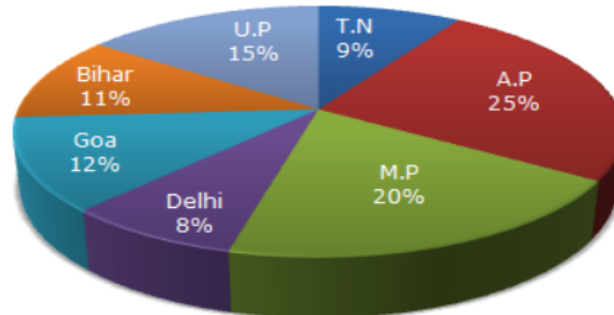
- (a) 2.1 million (b) 2.3 million (c) 2.7 million (d) 3.3 million

Q35. If the population of males below poverty line for State Q is 2.4 million and that for State T is 6 million, then the total populations of States Q and T are in the ratio?

- (a) 1:3 (b) 2:5 (c) 3:7 (d) 4:9

Directions for questions (36-40): Study the following graph and the table and answer the questions given below.

Data of different states regarding population of states in the year 1998



Total population of the given States = 3276000.

States	Sex and Literacy wise Population Ratio			
	Sex		Literacy	
	M	F	Literate	Illiterate
A.P.	5	3	2	7
M.P.	3	1	1	4
Delhi	2	3	2	1
Goa	3	5	3	2
Bihar	3	4	4	1
U.P.	3	2	7	2
T.N.	3	4	9	4

Q36. What will be the percentage of total number of males in U.P., M.P. and Goa together to the total population of all the given states?

- (a) 25% (b) 27.5% (c) 28.5% (d) 31.5%

Q37. What was the total number of illiterate people in A.P. and M.P. in 1998?

- (a) 876040 (b) 932170 (c) 981550 (d) 1161160

Q38. What is the ratio of the number of females in T.N. to the number of females in Delhi?

- (a) 7 : 5 (b) 9 : 7 (c) 13 : 11 (d) 15 : 14

Q39. What was the number of males in U.P. in the year 1998?

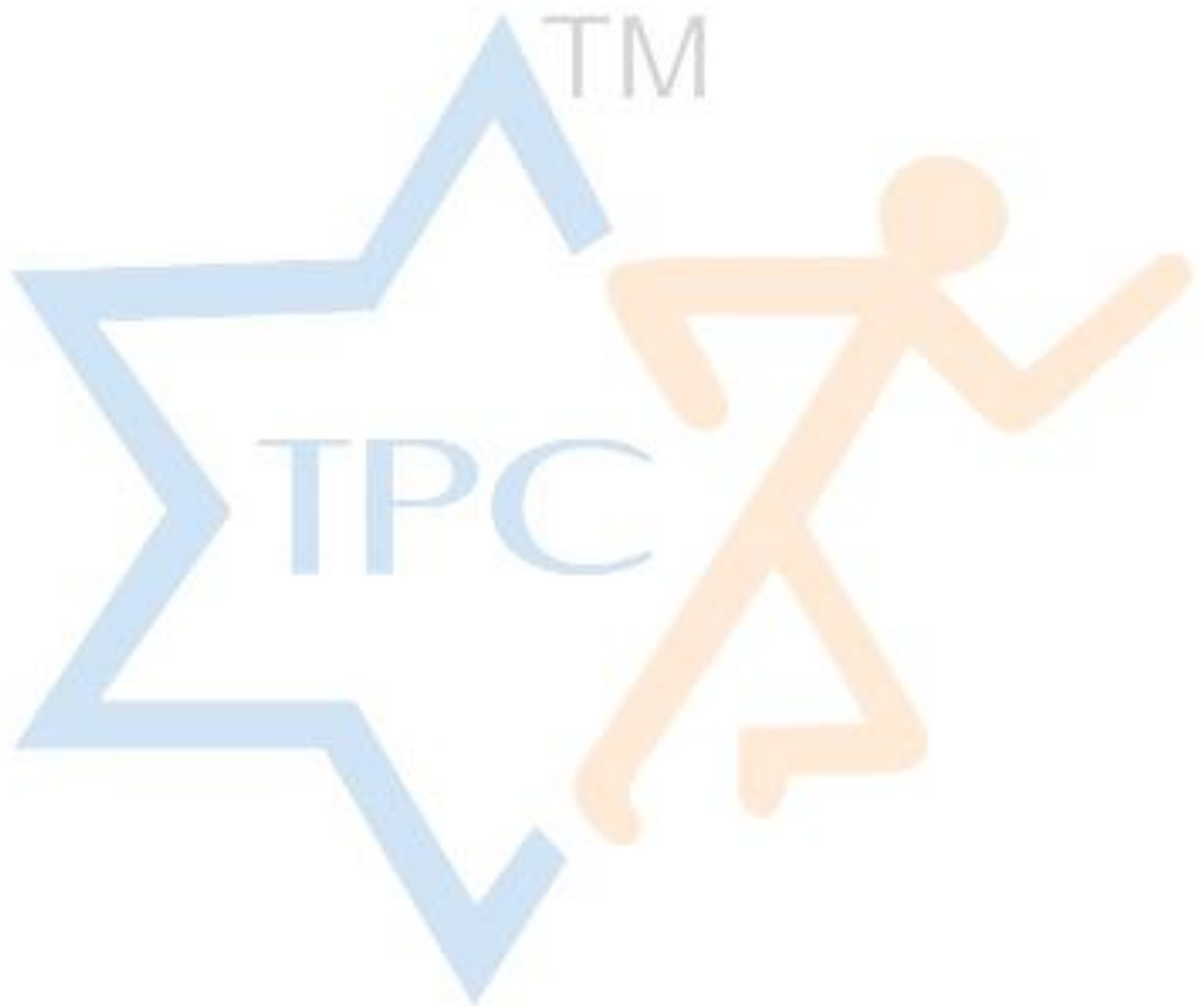
- (a) 254650 (b) 294840 (c) 321470 (d) 341200

Q40. If in the year 1998, there was an increase of 10% in the population of U.P. and 12% in the population of M.P. compared to the previous year, then what was the ratio of populations of U.P. and M.P. in 1997?

- (a) 42 : 55 (b) 48 : 55 (c) 7 : 11 (d) 4 : 5

Answer key

1	A	9	D	17	A	25	C	33	B
2	B	10	A	18	E	26	B	34	D
3	C	11	B	19	D	27	D	35	B
4	A	12	D	20	D	28	C	36	C
5	B	13	B	21	C	29	B	37	D
6	A	14	D	22	A	30	B	38	D
7	B	15	B	23	B	31	D	39	B
8	C	16	C	24	B	32	D	40	A



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