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Ratio and Proportion Questions for CAT 2026

16 Solved Questions | Easy to CAT-Level Difficulty | Free Practice PDF

This practice set accompanies the article “**Ratio and Proportion Questions for CAT 2026: With Solutions**” on catmock.com. Work through each section in order, attempt every question before reading the solution, and use the formula sheet on the next page as a quick reference during practice.

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Quick Formula Reference

Concept	Formula	Use Case
Basic Ratio	$a : b = a/b$	Comparing two quantities of the same kind
Proportion	$a:b = c:d \Rightarrow a \times d = b \times c$	Solving for an unknown term
Continued Proportion	$a:b = b:c \Rightarrow b^2 = a \times c$	Three quantities in a chain relationship
Componendo-Dividendo	If $a/b = c/d$, then $(a+b)/(a-b) = (c+d)/(c-d)$	Simplifying complex ratio equations
Partnership / Investment	Profit share $\propto$ Investment $\times$ Time	Splitting profits when capital or time varies

Section 1: Easy-Level Questions

Q1. The ratio of two numbers is 3:5. If 4 is added to both, the ratio becomes 2:3. Find the numbers.

Solution: Let the numbers be $3k$ and $5k$.

$$(3k + 4)/(5k + 4) = 2/3$$

$$\Rightarrow 9k + 12 = 10k + 8 \Rightarrow k = 4$$

Answer: The numbers are 12 and 20.

Q2. Divide Rs. 1,760 among A, B, and C in the ratio 4:5:7.

Solution: Total parts = $4 + 5 + 7 = 16$.

Value per part = $1760/16 = \text{Rs. } 110$.

Answer: A = Rs. 440, B = Rs. 550, C = Rs. 770.

Q3. If $a:b = 5:7$ and $b:c = 14:15$, find $a:b:c$.

Solution: Make 'b' common: $a:b = 5:7 = 10:14$, and $b:c = 14:15$.

Now b is 14 in both.

Answer: $a:b:c = 10:14:15$.

Q4. The sum of two numbers is 84, and their ratio is 4:3. Find the smaller number.

Solution: Let numbers = $4k$ and $3k$. $4k + 3k = 84 \Rightarrow k = 12$.

Smaller number = $3k = 3 \times 12$.

Answer: 36.

Q5. A bag contains coins in the ratio of Rs. 1, Rs. 2, and Rs. 5 coins as 6:5:3. If there are 168 coins in total, find the value of Rs. 5 coins.

Solution: Total parts = $6 + 5 + 3 = 14$. One part = $168/14 = 12$.

Number of Rs. 5 coins = $3 \times 12 = 36$.

Value = 36×5 .

Answer: Rs. 180.

Section 2: Moderate-Level Questions

Q6. A mixture contains milk and water in the ratio 5:2. If 14 litres of water is added, the ratio becomes 5:4. Find the initial quantity of milk.

Solution: Let milk = $5k$, water = $2k$.

$$5k/(2k + 14) = 5/4 \Rightarrow 20k = 10k + 70 \Rightarrow k = 7.$$

$$\text{Milk} = 5 \times 7.$$

Answer: 35 litres.

Q7. The incomes of X and Y are in the ratio 8:5, and their expenditures are in the ratio 5:3. If each saves Rs. 1,000, find X's income.

Solution: Let income = $8k$, $5k$; expenditure = $5m$, $3m$.

$$8k - 5m = 1000 \text{ and } 5k - 3m = 1000.$$

Multiply first by 3, second by 5: $24k - 15m = 3000$; $25k - 15m = 5000$.

Subtract: $k = 2000$.

Answer: X's income = $8 \times 2000 = \text{Rs. } 16,000$.

Q8. Two numbers are in the ratio 4:7. If each is increased by 12, the ratio becomes 5:8. What is the sum of the original numbers?

Solution: Let numbers = $4k$, $7k$.

$$(4k + 12)/(7k + 12) = 5/8 \Rightarrow 32k + 96 = 35k + 60 \Rightarrow k = 12.$$

Numbers = 48 and 84.

Answer: Sum = 132.

Q9. A sum of money is divided among A, B, and C such that A gets twice as much as B, and B gets thrice as much as C. If C's share is Rs. 600, find the total sum.

Solution: Let C = 600, B = $3 \times 600 = 1800$, A = $2 \times 1800 = 3600$.

$$\text{Total} = 3600 + 1800 + 600.$$

Answer: Rs. 6,000.

Q10. If $x:y = 3:4$, find the value of $(5x + 3y) : (5x - 3y)$.

Solution: Let $x = 3k$, $y = 4k$.

$$5x + 3y = 15k + 12k = 27k.$$

$$5x - 3y = 15k - 12k = 3k.$$

$$\text{Ratio} = 27k : 3k.$$

Answer: 9 : 1.

Q11. The ratio of ages of A and B, 5 years ago, was 3:4. Their present ages are in the ratio 4:5. Find A's present age.

Solution: Let ages 5 years ago = $3k$, $4k$. Present ages = $3k+5$, $4k+5$.

$$(3k+5)/(4k+5) = 4/5 \Rightarrow 15k + 25 = 16k + 20 \Rightarrow k = 5.$$

$$\text{A's present age} = 3(5) + 5.$$

Answer: 20 years.

Section 3: Difficult (CAT-Level / TITA-Style) Questions

Q12. Three partners A, B, and C invest in a business in the ratio 2:3:5. After 4 months, A doubles his investment. If the total profit at year-end is Rs. 69,000, find A's share.

Solution: Use Investment $\times$ Time.

$$A: (2 \times 4) + (4 \times 8) = 8 + 32 = 40$$

$$B: 3 \times 12 = 36$$

$$C: 5 \times 12 = 60$$

$$\text{Ratio} = 40:36:60 = 10:9:15, \text{ total} = 34 \text{ parts.}$$

$$\text{A's share} = (10/34) \times 69000.$$

Answer: $\approx$ Rs. 20,294.

Q13. A vessel contains a mixture of milk and water in the ratio 7:3. 20% of the mixture is removed and replaced with pure water. Find the new ratio of milk to water.

Solution: Let total mixture = 100 units. Milk = 70, Water = 30.

Remove 20%: Milk removed = 14, Water removed = 6. Remaining: Milk = 56, Water = 24.

Add 20 units of pure water: Water = 24 + 20 = 44.

Answer: New ratio = 56:44 = 14:11.

Q14. If $a:b:c = 2:3:4$ and $a+b+c = 63$, find the value of $(a^2+b^2+c^2)$.

Solution: $a=2k, b=3k, c=4k$. Sum = $9k = 63 \Rightarrow k=7$.

$$a=14, b=21, c=28.$$

$$a^2+b^2+c^2 = 196+441+784.$$

Answer: 1421.

Q15. The ratio of monthly incomes of P and Q is 5:6, and the ratio of their monthly expenditures is 3:4. If P saves Rs. 2,500 per month, which is one-fourth of his income, find Q's monthly savings.

Solution: P's income = $4 \times 2500 = 10,000$ (since savings is $1/4$ of income).

$$\text{P's expenditure} = 10,000 - 2,500 = 7,500.$$

$$\text{Income ratio } 5:6 \Rightarrow \text{Q's income} = (6/5) \times 10,000 = 12,000.$$

$$\text{Expenditure ratio } 3:4 \Rightarrow \text{Q's expenditure} = (4/3) \times 7,500 = 10,000.$$

$$\text{Q's savings} = 12,000 - 10,000.$$

Answer: Rs. 2,000.

Q16. A alone can do a piece of work in 12 days, and B alone in 18 days. They work together, but B leaves 4 days before the work is completed. In how many total days was the work completed? (Express your answer in the form of days, rounded to the nearest whole number — a TITA-style numerical answer.)

Solution: A's 1-day work = $1/12$, B's 1-day work = $1/18$.

Let total days = d . B works for $(d-4)$ days, A works for all d days.

$$d/12 + (d-4)/18 = 1. \text{ Multiply by 36: } 3d + 2(d-4) = 36 \Rightarrow 5d - 8 = 36 \Rightarrow d = 8.8.$$

Answer: $\approx$ 9 days (rounded).

Answer Key Summary

Q. No.	Final Answer
Q1	12 and 20
Q2	Rs. 440, Rs. 550, Rs. 770
Q3	10:14:15
Q4	36
Q5	Rs. 180
Q6	35 litres
Q7	Rs. 16,000
Q8	132
Q9	Rs. 6,000
Q10	9:1
Q11	20 years
Q12	$\approx$ Rs. 20,294
Q13	14:11
Q14	1421
Q15	Rs. 2,000
Q16	$\approx$ 9 days

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