

CLASS 8

MATHS

EXTRA QUESTIONS

Extra Questions: Class 8 Maths Chapter 7 Proportional Reasoning-1

Practice questions beyond the textbook exercises, testing deeper understanding of ratio and proportion for Class 8 Maths Chapter 7: Proportional Reasoning-1.

Contents

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1 (Assertion-Reason). Assertion: 6:9 and 10:15 are in proportion. Reason: Both ratios simplify to 2:3.
Solution: Both true, and the reason correctly explains the assertion — $6:9 = 2:3$ and $10:15 = 2:3$, so the two ratios are equal.

2 (Numerical). A car covers 180 km in 3 hours. At the same speed, how far will it travel in 5 hours?
Solution: Speed = $180 \div 3 = 60$ km/h. Distance in 5 hours = $60 \times 5 = 300$ km.

3 (Short Answer). Are the ratios 5:8 and 8:5 the same?
Solution: **No** — order matters in a ratio. 5:8 and 8:5 are reciprocals of each other and represent different comparisons, not the same relationship.

4 (Applied). Two numbers are in the ratio 3:4, and their sum is 84. Find the numbers.
Solution: Total parts = $3+4 = 7$; each part = $84 \div 7 = 12$. The numbers are **36 and 48**.

5 (Assertion-Reason). Assertion: If $a:b = c:d$, then $a:c = b:d$ also holds. Reason: This follows because $a:b=c:d$ means $ad=bc$, which is the same condition needed for $a:c=b:d$.
Solution: Both true, and the reason correctly explains the assertion — both proportions reduce to the same cross-product equation, $ad=bc$.

6 (Numerical). A recipe needs flour and sugar in the ratio 5:2 to make a 350 g mix. Find the quantity of each.
Solution: Total parts = 7; each part = $350 \div 7 = 50$ g. **Flour = 250 g, Sugar = 100 g.**

7 (Synthesis). If $a:b = 2:3$ and $b:c = 4:5$, find $a:b:c$.
Solution: Make b common: $a:b = 2:3 = 8:12$, and $b:c = 4:5 = 12:15$. So **$a:b:c = 8:12:15$** .

8 (Applied). A map has a scale of 1:50,000. Two towns are 8 cm apart on the map. Find the actual distance in km.
Solution: $8 \times 50,000 = 4,00,000$ cm = 4,000 m = **4 km**.

9 (Short Answer). Why must both terms of a ratio be in the same unit before simplifying it?
Solution: A ratio compares two quantities as pure numbers. If the units differ (e.g. 2 m to 50 cm), they must first be converted to a common unit ($2 \text{ m} = 200 \text{ cm}$) before the ratio ($200:50 = 4:1$) is meaningful.

10 (Assertion-Reason). Assertion: Dividing ₹600 in the ratio 1:2:3 gives ₹100, ₹200, and ₹300. Reason: The parts must add up to the total, and since $1+2+3=6$ parts, each part = $₹600 \div 6 = ₹100$.
Solution: Both true, and the reason correctly explains the assertion — $1 \times 100 = 100$, $2 \times 100 = 200$, $3 \times 100 = 300$, and these sum to ₹600.