# SOLUTIONS - PRACTICE TEST PAPER - 2026

**Subject:** Mathematics    **Class:** 7
**Chapter:** Ratio and Proportion

**Q1.** To simplify the ratio $0.75 : 1.25 : 2$, we first convert each term to a fraction:

$$0.75 = \frac{3}{4}, \quad 1.25 = \frac{5}{4}, \quad 2 = \frac{8}{4}$$

The ratio becomes:

$$\frac{3}{4} : \frac{5}{4} : \frac{8}{4}$$

Multiplying each term by 4 to eliminate the denominators:

$$3 : 5 : 8$$

Thus, the simplified ratio is $\boxed{3 : 5 : 8}$.

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**Q2.** Given:

$$A : B = 3 : 4 \quad \text{and} \quad B : C = 8 : 9$$

To combine these ratios, we make the $B$ term the same in both ratios. Multiply the first ratio by 2:

$$A : B = 6 : 8$$

Now, $B : C = 8 : 9$. Combining these:

$$A : B : C = 6 : 8 : 9$$

Thus, the ratio is $\boxed{6 : 8 : 9}$.

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**Q3.** Given:

$$\frac{3x + 5y}{3x - y} = \frac{7}{1}$$

Cross-multiplying:

$$3x + 5y = 21x - 7y$$

Rearranging:

$$5y + 7y = 21x - 3x \implies 12y = 18x \implies \frac{x}{y} = \frac{12}{18} = \frac{2}{3}$$

Thus, $x : y = \boxed{2 : 3}$.

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**Q4.** First, simplify the ratio $\frac{1}{3} : \frac{1}{4} : \frac{1}{6}$ by finding a common denominator (12):

$$\frac{1}{3} = \frac{4}{12}, \quad \frac{1}{4} = \frac{3}{12}, \quad \frac{1}{6} = \frac{2}{12}$$

The ratio becomes $4 : 3 : 2$. The total parts are $4 + 3 + 2 = 9$. B's share is:

$$\frac{3}{9} \times 1050 = 350$$

Thus, B's share is $\boxed{\text{Rs. } 350}$.

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**Q5.** Let the number to be added be $k$. The numbers become $6 + k$, $15 + k$, $20 + k$, and $43 + k$. For them to be proportional:

$$\frac{6+k}{15+k} = \frac{20+k}{43+k}$$

Cross-multiplying:

$$(6 + k)(43 + k) = (15 + k)(20 + k)$$

Expanding:

$$258 + 49k + k^2 = 300 + 35k + k^2$$

Simplifying:

$$14k = 42 \implies k = 3$$

Thus, the number to be added is $\boxed{3}$.

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**Q6.** The work done is constant, so:

$$12 \text{ men} \times 20 \text{ days} = M \text{ men} \times 15 \text{ days}$$

Solving for $M$:

$$M = \frac{12 \times 20}{15} = 16$$

Thus, $\boxed{16 \text{ men}}$ are required.

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**Q7.** The scale is $500$ km $= 2.5$ cm. For $8.4$ cm:

$$\text{Actual distance} = \frac{500}{2.5} \times 8.4 = 200 \times 8.4 = 1680 \text{ km}$$

Thus, the actual distance is $\boxed{1680 \text{ km}}$.

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**Q8.** The mean proportional $x$ between 9 and 16 satisfies:

$$x^2 = 9 \times 16 \implies x = \sqrt{144} = 12$$

Thus, the mean proportional is $\boxed{12}$.

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**Q9.** Let income be $10x$ and expenditure be $7x$. Savings:

$$10x - 7x = 3x = 12000 \implies x = 4000$$

Total income:

$$10x = 10 \times 4000 = 40000$$

Thus, the total income is $\boxed{\text{Rs. } 40,000}$.

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**Q10.** Given $x : 12 = 8 : 6$, we have:

$$\frac{x}{12} = \frac{8}{6} \implies x = \frac{8 \times 12}{6} = 16$$

Thus:

$$x^2 - 10 = 16^2 - 10 = 256 - 10 = 246$$

The value is $\boxed{246}$.

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**Q11.** Initially, milk is 40 litres and water is 20 litres. Let $w$ be the water to add:

$$\frac{40}{20 + w} = \frac{1}{2} \implies 80 = 20 + w \implies w = 60$$

Thus, $\boxed{60 \text{ litres}}$ of water must be added.

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**Q12.** Total food is for $150 \times 45 = 6750$ man-days. After 10 days, $150 \times 10 = 1500$ man-days are consumed, leaving 5250 man-days. With 125 men:

$$\text{Days} = \frac{5250}{125} = 42$$

Thus, the food will last $\boxed{42 \text{ days}}$ more.

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**Q13.** Cost per orange:

$$\frac{180}{36} = 5 \text{ Rs.}$$

Cost for 25 oranges:

$$25 \times 5 = 125 \text{ Rs.}$$

Thus, the cost is $\boxed{\text{Rs. } 125}$.

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**Q14.** Let the sides be $\frac{x}{2}$, $\frac{x}{3}$, and $\frac{x}{4}$. The perimeter:

$$\frac{x}{2} + \frac{x}{3} + \frac{x}{4} = 52$$

Solving:

$$\frac{13x}{12} = 52 \implies x = 48$$

The smallest side:

$$\frac{48}{4} = 12 \text{ cm}$$

Thus, the smallest side is $\boxed{12 \text{ cm}}$.

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**Q15.** The production rate per machine per hour:

$$\frac{560}{8 \times 4} = 17.5 \text{ units/hour}$$

For 12 machines in 10 hours:

$$12 \times 10 \times 17.5 = 2100 \text{ units}$$

Thus, $\boxed{2100 \text{ units}}$ can be produced.