SOLUTIONS - PRACTICE TEST PAPER - 2026

Subject: Mathematics **Class:** 7

Chapter: Ratio and Proportion

Q1. Convert mixed numbers to improper fractions:

$$1\frac{1}{2} = \frac{3}{2}, \quad 2\frac{1}{4} = \frac{9}{4}, \quad 3 = \frac{12}{4}$$

The ratio becomes:

$$\frac{3}{2} : \frac{9}{4} : \frac{12}{4}$$

Multiply each term by 4 to eliminate denominators:

$$6 : 9 : 12$$

Simplify by dividing by 3:

$$2 : 3 : 4$$

Thus, the simplified ratio is $\boxed{2 : 3 : 4}$.

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Q2. Let $2A = 3B = 4C = k$. Then:

$$A = \frac{k}{2}, \quad B = \frac{k}{3}, \quad C = \frac{k}{4}$$

The ratio $A : B : C$ is:

$$\frac{k}{2} : \frac{k}{3} : \frac{k}{4}$$

Multiply each term by 12 to eliminate denominators:

$$6k : 4k : 3k$$

Thus, the ratio is $\boxed{6 : 4 : 3}$.

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Q3. For the numbers to be in proportion:

$$\frac{x-3}{x+1} = \frac{x+1}{x+9}$$

Cross-multiplying:

$$(x-3)(x+9) = (x+1)^2$$

Expanding:

$$x^2 + 6x - 27 = x^2 + 2x + 1$$

Simplifying:

$$4x = 28 \implies x = 7$$

Thus, the value of x is $\boxed{7}$.

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Q4. Given $A : B = 2 : 1$ and $B : C = 3 : 1$, combine the ratios:

$$A : B : C = 2 \times 3 : 1 \times 3 : 1 \times 1 = 6 : 3 : 1$$

Total parts:

$$6 + 3 + 1 = 10$$

A's share:

$$\frac{6}{10} \times 2600 = 1560$$

Thus, A receives $\boxed{\text{Rs. } 1,560}$.

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Q5. The scale $1 : 25,000$ means 1 cm on the map is 25,000 cm in reality. For 4 cm:

$$4 \times 25,000 = 100,000 \text{ cm} = 1 \text{ km}$$

Thus, the actual distance is $\boxed{1 \text{ km}}$.

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Q6. Total food is for $200 \times 50 = 10,000$ student-days. After 10 days, $200 \times 10 = 2,000$ student-days are consumed, leaving $8,000$ student-days. With 250 students:

$$\text{Days} = \frac{8,000}{250} = 32$$

Thus, the food will last $\boxed{32 \text{ days}}$ more.

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Q7. Let the angles be $3x, 4x, 5x$, and $6x$. The sum of angles in a quadrilateral is $360°$:

$$3x + 4x + 5x + 6x = 360 \implies 18x = 360 \implies x = 20$$

The largest angle is $6x = 120°$ and the smallest is $3x = 60°$. The difference:

$$120° - 60° = 60°$$

Thus, the difference is $\boxed{60°}$.

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Q8. The mean proportional x between 0.08 and 0.18 satisfies:

$$x^2 = 0.08 \times 0.18 = 0.0144 \implies x = \sqrt{0.0144} = 0.12$$

Thus, the mean proportional is $\boxed{0.12}$.

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Q9. The distance is:

$$60 \text{ km/h} \times 5 \text{ h} = 300 \text{ km}$$

To cover 300 km in 4 hours:

$$\text{Speed} = \frac{300}{4} = 75 \text{ km/h}$$

Thus, the required speed is $\boxed{75 \text{ km/h}}$.

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Q10. The new salary is:

$$\frac{9}{8} \times 16,000 = 18,000$$

Thus, the new salary is $\boxed{\text{Rs. } 18,000}$.

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Q11. Given the ratio 5 : 3 and 1,500 fiction books:

$$5x = 1,500 \implies x = 300$$

Non-fiction books:

$$3x = 900$$

To make the ratio 1 : 1, non-fiction books must be 1,500. Thus, $1,500 - 900 = 600$ more non-fiction books must be added. Thus, $\boxed{600}$ more non-fiction books must be added.

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Q12. The work rate is:

$$\frac{120 \text{ m}}{20 \text{ men} \times 6 \text{ days}} = 1 \text{ m/man-day}$$

For 35 men in 8 days:

$$35 \times 8 \times 1 = 280 \text{ m}$$

Thus, $\boxed{280 \text{ m}}$ of cloth can be woven.

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Q13. Given $x, 6, y$ are in continued proportion:

$$\frac{6}{x} = \frac{y}{6} \implies y = \frac{36}{x}$$

Given $x, y, 48$ are in continued proportion:

$$\frac{y}{x} = \frac{48}{y} \implies y^2 = 48x$$

Substitute $y = \frac{36}{x}$:

$$\left(\frac{36}{x}\right)^2 = 48x \implies \frac{1,296}{x^2} = 48x \implies 1,296 = 48x^3 \implies x^3 = 27 \implies x = 3$$

Then $y = \frac{36}{3} = 12$. Thus, $x + y = 3 + 12 = \boxed{15}$.

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Q14. Let the father's age be $7x$ and the son's age be $2x$. The product of their ages:

$$7x \times 2x = 504 \implies 14x^2 = 504 \implies x^2 = 36 \implies x = 6$$

The father's age:

$$7x = 7 \times 6 = 42$$

Thus, the father's current age is $\boxed{42 \text{ years}}$.

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Q15. Let the number of 10p, 25p, and 50p coins be $5x, 4x$, and $2x$ respectively. The total value in paise:

$$5x \times 10 + 4x \times 25 + 2x \times 50 = 50x + 100x + 100x = 250x$$

Given the total value is Rs. 120 (12,000 paise):

$$250x = 12,000 \implies x = 48$$

The number of 25p coins:

$$4x = 4 \times 48 = 192$$

Thus, the number of 25p coins is $\boxed{192}$.