

Maths Problem-Solving Challenges

Ten multi-step problems in context across number, proportion, algebra, geometry and statistics.

Name _____ Date _____ Class _____

Learning objective: I can solve multi-step maths problems and explain my method.

✓ I can pick out key information ✓ I can choose a method ✓ I can check my answer

Problem-solving checklist: read the question twice · underline key information · decide which operation or method you need · show every step · check your answer makes sense.

1 Number and proportion

- 1 Cinema tickets cost £9 for adults and £6 for children. How much do 2 adults and 4 children pay?

Answer

- 2 A coat costs £80. It is reduced by 35% in a sale. What is the sale price?

Answer

- 3 A recipe for 6 people uses 450 g of flour. How much flour is needed for 10 people?

Answer

- 4 I think of a number, multiply it by 3 and subtract 8. The answer is 25. What was my number?

Answer

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2 Algebra, geometry and statistics

- 1 A sequence starts 7, 11, 15, 19, ... What is the 50th term?

Answer

- 2 A rectangle has a perimeter of 36 cm. Its length is twice its width. Find its area.

Answer

- 3 A school has 600 pupils. The ratio of boys to girls is 7 : 8. How many girls are there?

Answer

- 4 Ali scores 72, 85 and 64 in three tests. What must he score in the fourth test to get a mean of 75?

Answer

- 5 Two angles in an isosceles triangle are equal. The third angle is 40° . Find the equal angles.

Answer

- 6 A phone contract costs £15 a month plus £0.10 per text. Write a formula for the cost C of one month with t texts, then find the cost for 80 texts.

Answer

Answer Key

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Question	Answers
1 Number and proportion	1 $2 \times 9 + 4 \times 6 = \text{£}42$; 2 $\text{£}80 \times 0.65 = \text{£}52$; 3 $450 \div 6 = 75$ g per person; $75 \times 10 = 750$ g; 4 $(25 + 8) \div 3 = 11$
2 Algebra, geometry and statistics	1 nth term $4n + 3$; $4 \times 50 + 3 = 203$; 2 width 6 cm, length 12 cm ($6 + 12 + 6 + 12 = 36$); area = 72 cm^2 ; 3 $600 \div 15 = 40$; $8 \times 40 = 320$ girls; $4 \times 75 = 300$; $300 - (72 + 85 + 64) = 79$; 5 $(180 - 40) \div 2 = 70^\circ$ each; 6 $C = 15 + 0.1t$; $C = 15 + 8 = \text{£}23$

Teaching note: every answer was calculated in code. Encourage pupils to estimate first and to check their answers using the inverse operation.