**Day 250** **C Tier 10-a-day: Model Solutions**

## 1 Names of polygons

A polygon has 7 sides.
Write down the name of this polygon.

A shape with 7 sides is called a heptagon
**Answer: heptagon**

## 2 Money

A carton of juice costs 60p.
Work out the cost of 7 cartons.
Give your answer in pounds.

60p × 7 = 420p
420p = £4.20
**Answer: £4.20**

## 3 Substitution

Work out the value of $\frac{c}{4}$ when c = 24.

$\frac{c}{4}$ means c ÷ 4
24 ÷ 4 = 6
**Answer: 6**

## 4 Fractions of a group

In a bag of 15 sweets, 9 are red.
What fraction of the sweets are red? Give your answer in its simplest form.

$\frac{9}{15}$

Divide top and bottom by 3: $\frac{3}{5}$

**Answer:** $\frac{3}{5}$

## 5 Number line

The number line shows an arrow.
Write down the number the arrow points to.

The numbers go up by 1 for each mark
The arrow points to 3
**Answer: 3**

## 6 Isosceles triangles

The diagram shows an isosceles triangle.
Work out the size of angle a.
The diagram is not drawn accurately.

The triangle is isosceles, so the two base angles are both 30°
30 + 30 = 60
180 − 60 = 120
**Answer: a = 120°**

## 7 Ratio, finding the other part

At a concert, the ratio of adults to children is 4 : 3.
There are 16 adults.
Work out the number of children.

16 ÷ 4 = 4 for each part
3 × 4 = 12
**Answer: 12**

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## 8 Cost from area

A rectangular hall floor is 8 m long and 3 m wide.
Flooring costs £4 per $m^2$.
Work out the cost of covering the hall floor.

Area = 8 × 3 = 24 $m^2$
Cost = 24 × £4 = £96
**Answer: £96**

## 9 Division in context

Each coach holds 30 people.
72 people need a lift.
How many coaches are needed?

72 ÷ 30 = 2 remainder 12
The extra people need another coach
**Answer: 3**

## 10 Pattern sequences

Matchsticks are used to make a pattern of triangles.
The diagram shows the first three patterns.
How many matchsticks are needed for
(a) Pattern 7
(b) Pattern 8

Pattern 1, 2, 3 have 3, 5, 7 matchsticks
Each pattern has 2 more matchsticks than the one before
Pattern 7: 3 + 2 × 6 = 15
Pattern 8: 3 + 2 × 7 = 17
**Answer: (a) 15 (b) 17**