Day 282 **C Tier 10-a-day: Model Solutions**

1 Function machines

Here is a function machine.
Work out the output when the input is 12.

12 × 4 = 48
48 − 5 = 43
Answer: 43

2 Fractions of a shape

What fraction of the shape is shaded?

There are 4 equal parts
1 parts are shaded

Fraction shaded = $\frac{1}{4}$

Answer: $\frac{1}{4}$

3 Types of triangle

A triangle has sides of length 12 cm, 12 cm and 12 cm.
What type of triangle is it?

All three sides are equal
Answer: equilateral

4 Probability with dice

A fair 8-sided dice numbered 1 to 8 is rolled.
Write down the probability of rolling
(a) an even number
(b) a number greater than 5

(a) 4 out of 8 numbers: $\frac{4}{8} = \frac{1}{2}$

(b) 3 out of 8 numbers: $\frac{3}{8}$

Answer: (a) $\frac{1}{2}$ (b) $\frac{3}{8}$

5 Finish time

A film starts at 9:55 am.
It lasts 10 minutes.
At what time does the film finish?

Add the minutes: 9:55 am + 10 minutes = 10:05 am
Answer: 10:05 am

6 Probabilities add up to 1

A bag has four colours.
The table shows the probability of each colour.
The probabilities add up to 1.
Work out the missing probability.

Add the known probabilities: 0.5 + 0.15 + 0.15 = 0.8
1 − 0.8 = 0.2
Answer: 0.2

7 Missing numbers

Find the missing number.
6 × ? = 66

66 ÷ 6 = 11
Answer: 11

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8 Stem and leaf diagrams

The stem and leaf diagram shows the ages, in years, of people in a club.
Write down the smallest value.

The first row has the smallest stem and the first leaf is the smallest
21
Answer: 21

9 Substitution

y = 6 and z = 5
Work out the value of
(a) y + 3z
(b) yz

(a) 6 + 3 × 5 = 21
(b) 6 × 5 = 30
Answer: (a) 21 (b) 30

10 Cost from perimeter

A rectangular field is 15 m long and 9 m wide.
Fencing costs £8 per metre.
Work out the cost of putting fence all the way round the field.

Perimeter = 15 + 9 + 15 + 9 = 48 m
Cost = 48 × £8 = £384
Answer: £384