

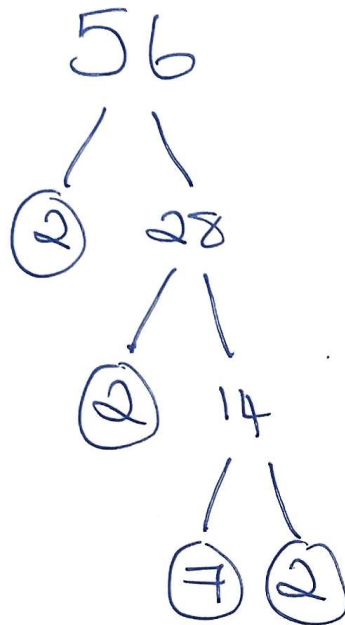
We do!

 hegarty **maths**

29-30

Q1.

Express 56 as the ^xproduct of its prime factors.



(2 marks)

All circled numbers
are prime.

$$\begin{aligned}
 56 &= 2 \times 2 \times 2 \times 7 \\
 &= 2^3 \times 7
 \end{aligned}$$

Product
means
'times'

You do!

Q2.

29-30

Express 72 as a product of its prime factors.

(2 marks)

We do!

Q3.

548-552

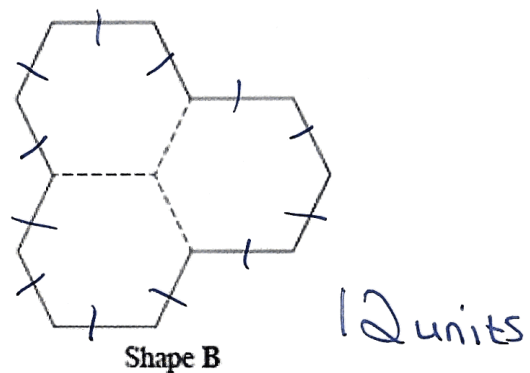
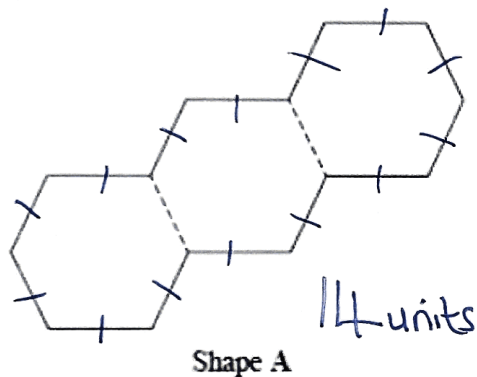
Here is a regular hexagon.



There are six identical hexagons.

Three of the hexagons are joined to make shape **A**.

The other three hexagons are joined to make shape **B**.



If the side length of the hexagon is 1 unit, determine the perimeter of each shape.

(2 marks)

Perimeter = Distance around the outside.

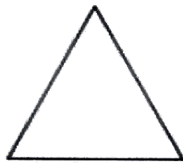
Best method → count the number of lengths.

You do!

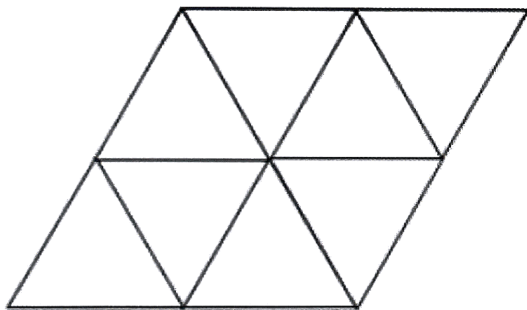
Q4.

548-552

The perimeter of the equilateral triangle drawn below is 9 cm.



The shape below is made of eight of these triangles. Find its perimeter.



(2 marks)

We Do!

Q5.

68-69

Work out

$$\frac{2}{3} \times \frac{9}{10}$$

Give your answer in its simplest form.

(2 marks)

$$\frac{2}{3} \times \frac{9}{10} = \frac{2 \times 9}{3 \times 10} = \frac{18}{30} = \frac{3}{5}$$

$\xrightarrow{\div 6}$
 $\xleftarrow{\div 6}$

$$\underline{\underline{\frac{3}{5}}}$$

You do!

 hegartymaths

68-69

Q6.

Work out

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

Give your fraction in its simplest form.

(2 marks)

We do!

 hegartymaths

332-334

Q7.

There are some oranges and apples in a box.

The total number of oranges and apples is 54

The ratio of the number of oranges to the number of apples is 1 : 5

Work out the number of apples in the box.

(2 marks)

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$= 9$

$= 9 \times 5$

$= 45$

6 boxes in total

$$54 \div 6 = 9$$

45 apples.

You do!

Q8.

Pavel and Katie share some sweets in the ratio 3 : 8.
There are 55 sweets in total.

How many sweets does Pavel get?

(2 marks)

We do!

 hegartymaths

780-783

Q9.

When $x = 8$, what is the value of $5x$?

$$5x = 5 \times x = 5 \times 8 = 40$$

When $x = 8$, what is the value of x^2 ?

$$x^2 = x \times x = 8 \times 8 = 64$$

This rule gives the cost, in euros, of hiring a bicycle for a number of days.

Cost in euros = $8 \times (\text{number of days}) + 15$

Marina hires a bicycle for 4 days.

Work out the cost in euros.

(2 marks)

$$\begin{aligned} \text{Cost} &= 8 \times 4 + 15 \\ &= 32 + 15 = \underline{\underline{47 \text{ euros}}} \end{aligned}$$

You do!

Q10.

$$d = 6$$

Work out the value of $3 + d$.

(1 mark)

$$f = 8$$

Work out the value of $2f + 7$.

(2 marks)

You can use this rule to work out the total hire charge, in pounds (£), for hiring a satellite phone.

$$\text{Total hire charge} = \text{number of weeks} \times 90 + 50$$

Ismail wants to hire a satellite phone for 4 weeks.

Work out the total hire charge.

(2 marks)

Q11.

197

Here is the rule to find the next term of a sequence.

Multiply the previous term by 3 and then subtract 5

The first term of this sequence is 12

Calculate the next three numbers in the sequence.

$$12 \times 3 - 5 = 31$$

$$31 \times 3 - 5 = 88$$

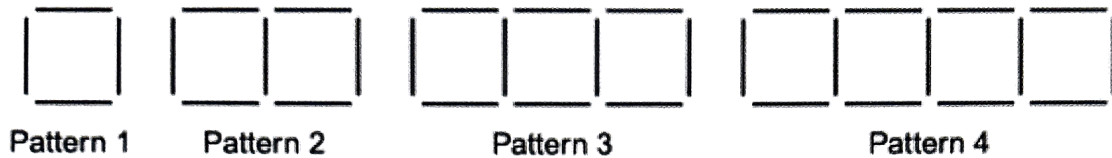
$$88 \times 3 - 5 = 259$$

(2 marks)

Q12.

197

Patterns are made from sticks.



Here is a rule for working out the number of sticks in a pattern.

$$3 \times \text{Pattern number} + 1$$

How many sticks are in Pattern 10?

(1 mark)

How many sticks are in Pattern 50?

(1 mark)