Tuesday

3 In a café a muffin costs $\frac{2}{5}$ of the cost of a coffee.

The cost of 3 muffins and 2 cups of coffee is £9.12

How much does a cup of coffee and a muffin cost?

4 The ratio of apples to pears in a box is 3 : 1

150 apples are removed from the box.

45 pears are removed from the box.

The ratio of apples to pears is now 2 : 1

How many apples and pears were in the box at the start?

Level 6 ▼ | **Subtraction ▼** | **Five–Digit Numbers ▼**

Daily 10

Mental Maths Challenge

You will be asked 10 questions.

Write down each of your answers.

Check your answers at the end.

Choose your question interval to start:

| 3 secs | 5 secs | 7 secs | 10 secs | 15 secs | 20 secs | Manual |

# Dicey Perimeter, Dicey Area

Stage: 2 ★

This is a game for two players.

You will need two dice, some sheets of centimetre squared paper and two pencils or pens.

The aim of the game is to be the first to reach the agreed score.

How to play:
1. Decide on your target score. 10 might be a good number.
2. Decide who will go first.
3. Player 1 throws the two dice and finds their product.
4. Player 1 must then draw as many rectilinear* shapes as possible which have either an area or a perimeter equal to the product of the dice. Player 1 scores 1 point for each correct shape.
5. Player 2 throws the dice, finds their product and draws as many shapes as possible in the same way.
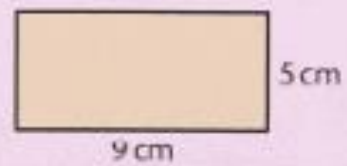6. The winner of the game is the first to reach the agreed target score.
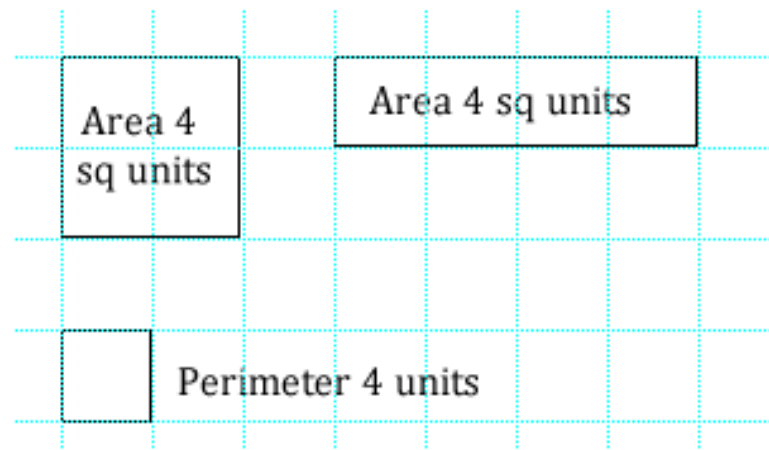
Draw a 9x5 rectangle, now draw a rectangle with the same perimeter but a smaller area.

Draw an 8x3 rectangle, now draw a rectangle with the same area but a longer perimeter.

B

1 a) Draw this rectangle.

5 cm
9 cm

Work out the area.

b) Draw a different rectangle with the same perimeter but a smaller area.

c) Draw another rectangle with the same perimeter but this time with a larger area.

d) Label the dimensions and areas of each rectangle.

2 a) Draw this rectangle.

3 cm
8 cm

Work out the perimeter.

b) Draw a different rectangle with the same area but a longer perimeter.

c) Draw another rectangle with the same area but a shorter perimeter.

d) Label the dimensions and write down the perimeter of each rectangle.

3 a) Draw a square with a perimeter of 16 cm.

b) Draw two different rectangles with the same perimeter as the square.

c) Work out the area of each shape.

d) Which shape has the largest area?

4 a) Draw a square with an area of 36 cm².

b) Draw two different rectangles with the same area as the square.

c) Work out the perimeters of each shape.

d) Which shape has the shortest perimeter?

C

1 A factory is 60 m long and has an area of 3000 m². Its warehouse has the same perimeter but is 15 m longer. What is the area of the warehouse?

2 Letitia's bedroom is 6 m long and 3·6 m wide. Brandon's room has the same area but is 40 cm wider. How long is Brandon's room?

3 Copy this table showing the measurements of rectilinear shapes with a perimeter of 20 cm.

Length	Width	Area
5 cm	5 cm	25 cm²
6 cm		
7 cm		
8 cm		
9 cm		

Here is a rectangle. A square has the same area as this rectangle. What is the side length of the square?
A different square has the same
perimeter as this rectangle. What is the side length of this square?

8cm

2cm
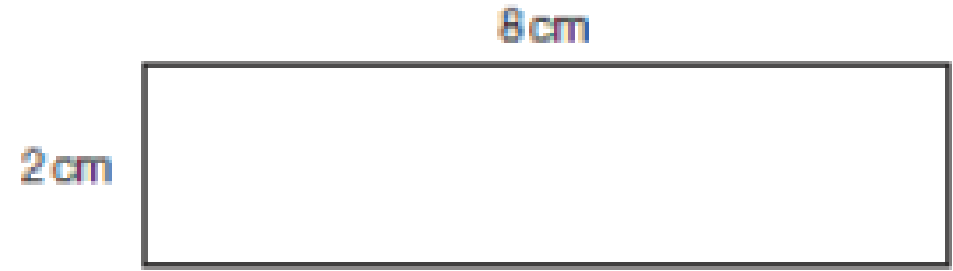
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B

1 a) 45 m²   2 a) 22 cm   3 d) square 4 cm × 4 cm
4 d) square 6 cm × 6 cm

C

1 2625 m²

2 5·4 m

3

Length	Width	Area
5 cm	5 cm	25 cm²
6 cm	4 cm	24 cm²
7 cm	3 cm	21 cm²
8 cm	2 cm	16 cm²
9 cm	1 cm	9 cm²

4 The longer the rectangle the smaller the area. The shorter the
rectangle the larger the area