Length and perimeter

- Measuring and drawing to the nearest millimetre
- Estimating distances using appropriate units
- Calculating the perimeter of a figure

Keywords

You should know

explanation 1

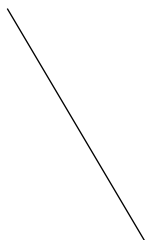**1** Measure the length of each line. Give your answers to the nearest 0.1 cm.
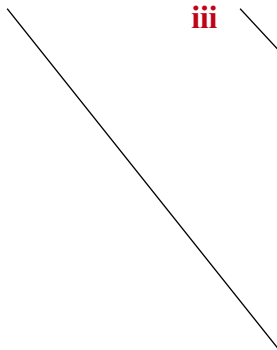
a _____

b _____

c _____

d _____

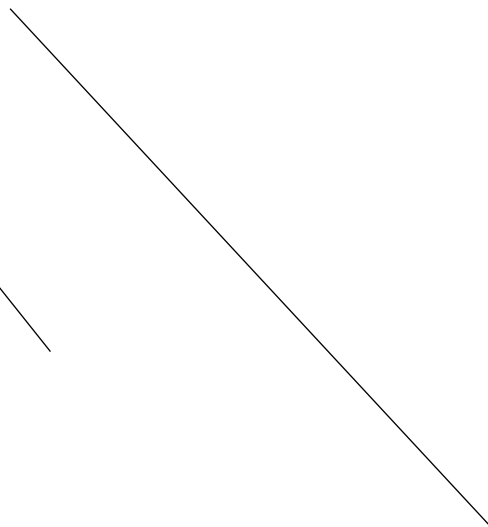**2 a** Measure the length of each line. Give your answers to the nearest millimetre.
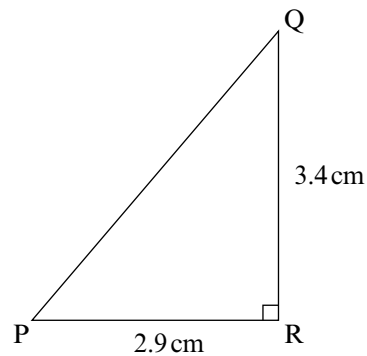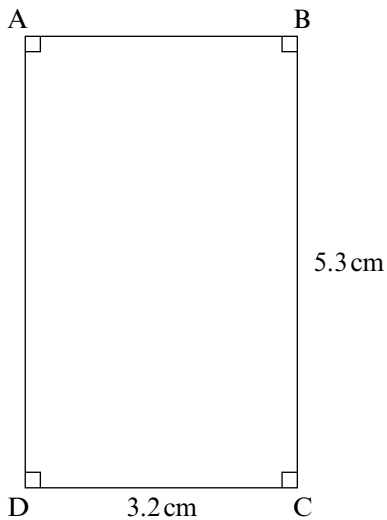
i   ii   iii

b One of the lines has the same length as a line in question **1**. Which lines are they?

3 a Draw each of the diagrams below as accurately as you can using the measurements shown.


b Measure these distances to the nearest 0.1 cm.

i AC   **ii** BD   **iii** PQ

c What do you notice about the lengths of AC and BD?

4 Here are two pictures of computer monitors. The screen size is measured along a diagonal of the rectangle containing the picture.

a Measure each screen size as shown to the nearest 0.1 cm.

b The real screen sizes are ten times the sizes shown here.

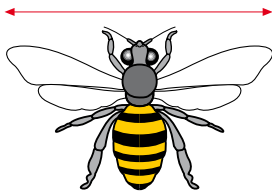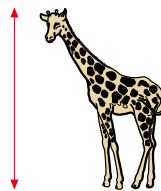Write down the real screen size in each case.

i
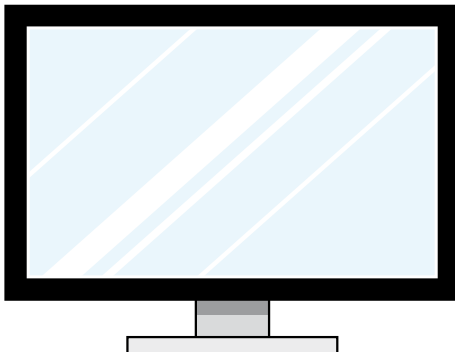
ii
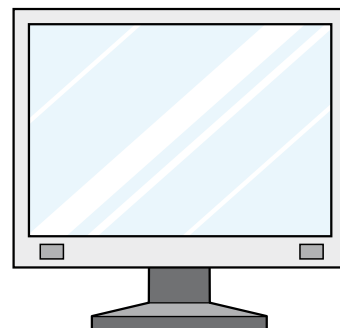
explanation 2

5 Choose from the numbers and units given in the table to make the measurements described below. Pictures are not drawn to scale.

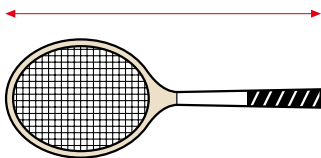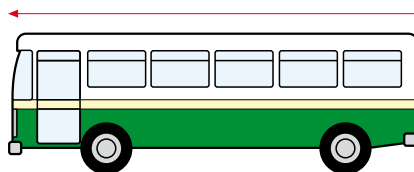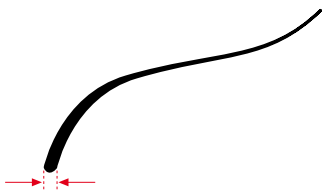| Numbers	Units
105, 0.05, 5.4, 27, 68, 11	mm, cm, m

Wingspan of bumblebee

Height of giraffe

Choose the most sensible units first, then look for a suitable number.
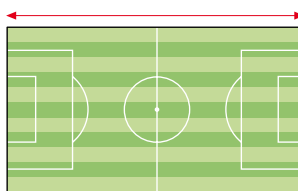
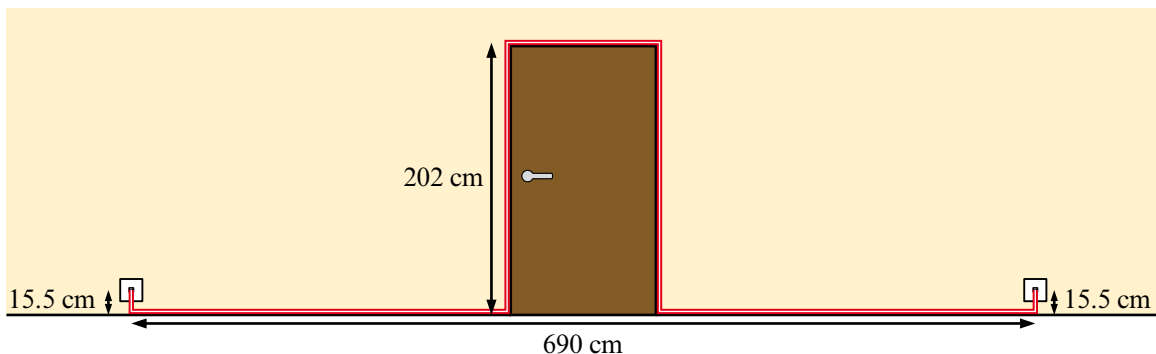Length of a tennis racquet

Length of a bus

Thickness of a human hair

Length of Wembley pitch

6 The diagram shows the path to be followed by cable linking two telephone sockets. The cable passes over a doorway at a height of 202 cm.
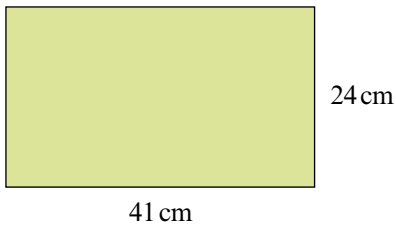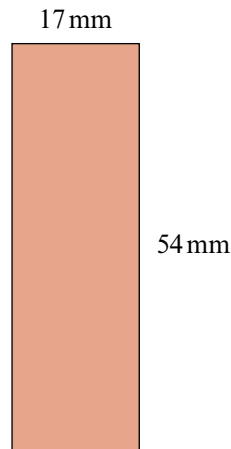
How much cable is needed?

202 cm

15.5 cm

15.5 cm

690 cm

explanation 3

7 Work out the perimeter of each of these rectangles.

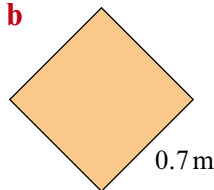**a**

24 cm

41 cm

b 17 mm

54 mm

c 14 m

36 m
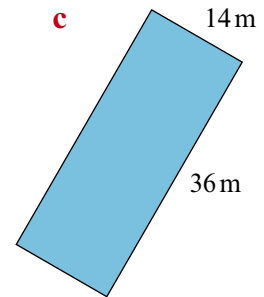
8 Work out the perimeter of each of these squares.
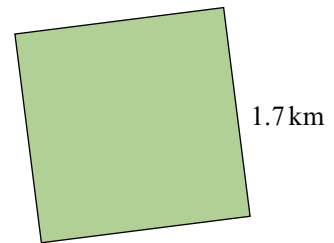
a

28 cm
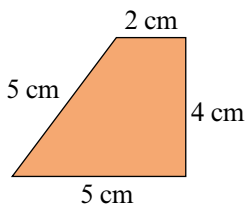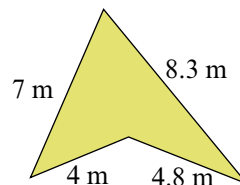
b

0.7 m

c

1.7 km
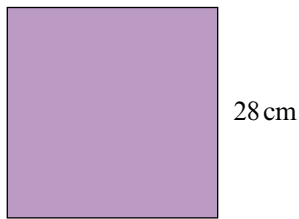
9 The perimeter of a square is 84 cm. What is the length of each side?

10 Work out the perimeter of each of these quadrilaterals.

a
2 cm
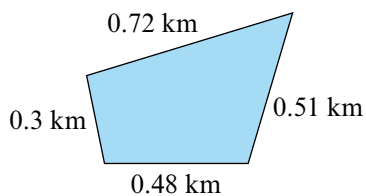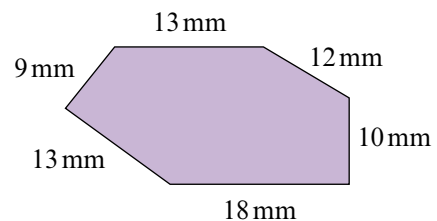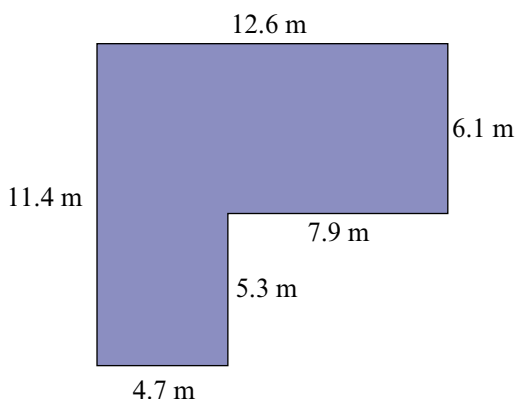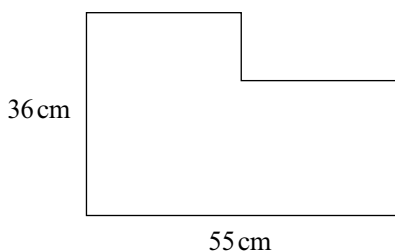5 cm
4 cm
5 cm

b
7 m
8.3 m
4 m   4.8 m

c
0.72 km
0.3 km
0.51 km
0.48 km

d
13 mm
9 mm
12 mm
10 mm
13 mm
18 mm

11 a Work out the perimeter of the shape below.
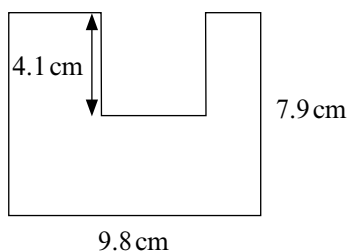
12.6 m

6.1 m

11.4 m

7.9 m

5.3 m

4.7 m

b Show that the perimeter can be worked out by adding two of the lengths shown and doubling the answer.
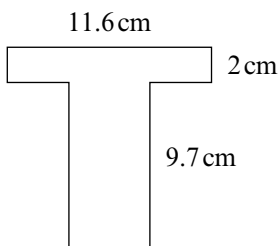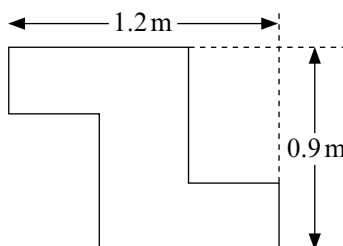
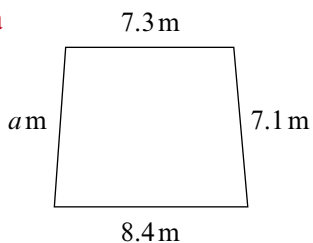**12** Work out the perimeter of each of these figures.

a

36 cm

55 cm

b

4.1 cm

7.9 cm

9.8 cm

c
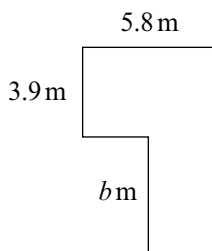
11.6 cm

2 cm

9.7 cm

d

1.2 m

0.9 m

13 The perimeter of each of these figures is 30 m. Calculate the value of *a*, *b* and *c*.

a

7.3 m

a m

7.1 m

8.4 m

b

5.8 m
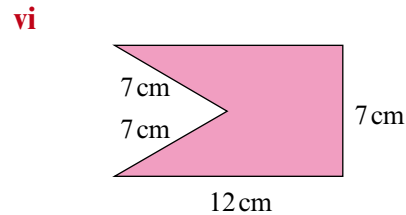
3.9 m

b m

c

5.2 m

5.9 m

c m
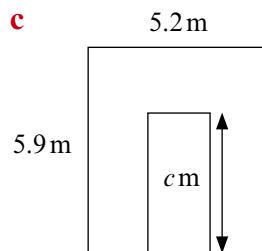
14 a Without working out the perimeters, find which of the shapes below have the same perimeter as this rectangle.
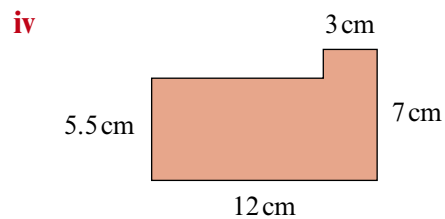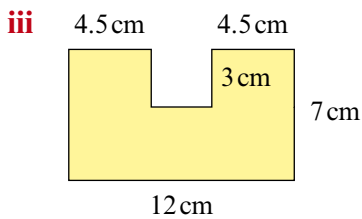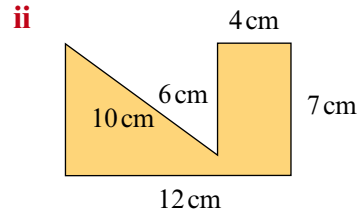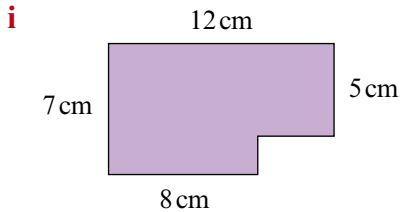
7 cm

12 cm
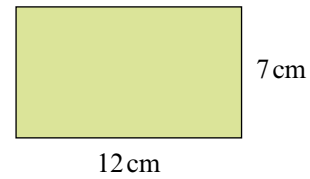
b Find the perimeter of each shape.

i

12 cm

7 cm

5 cm

8 cm

ii

4 cm

6 cm

10 cm

7 cm

12 cm

iii

4.5 cm   4.5 cm

3 cm

7 cm

12 cm

iv

3 cm

5.5 cm

7 cm

12 cm

v

8 cm

5 cm

4 cm

7 cm

12 cm

vi

7 cm

7 cm

7 cm

12 cm

vii

6 cm

3 cm

7 cm

12 cm
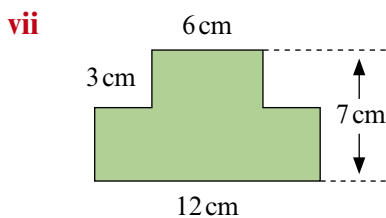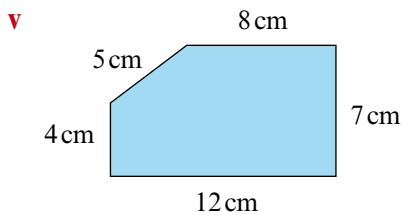
15 Find the perimeter of this shape.

16 cm

16 cm