Shapes

- Finding the perimeter of compound 2-D shapes
- Finding the area of compound 2-D shapes
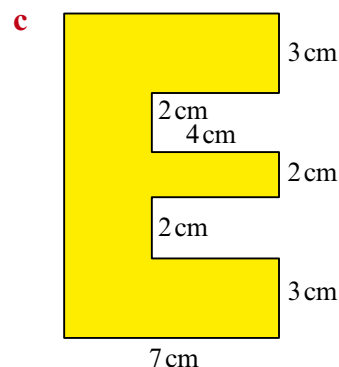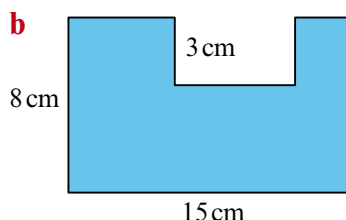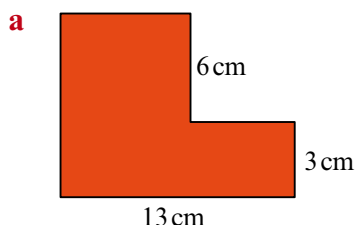
Keywords

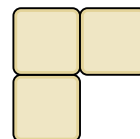You should know

explanation 1a   explanation 1b

1 Find the perimeter of each of these shapes.

a

6 cm
3 cm
13 cm

b

3 cm
8 cm
15 cm

c

3 cm
2 cm
4 cm
2 cm
2 cm
3 cm
7 cm

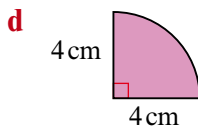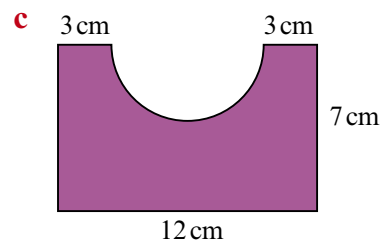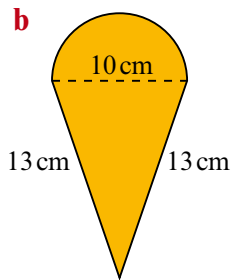**2** James has seven tiles. Each tile is a square that has sides of length 1 cm.
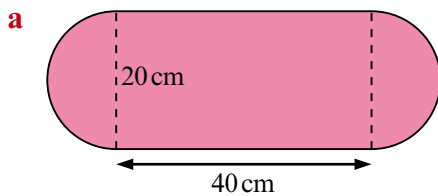
The tiles must be laid edge to edge. Here is an example.

a How can James arrange the seven tiles so that the resulting shape has the greatest possible perimeter?

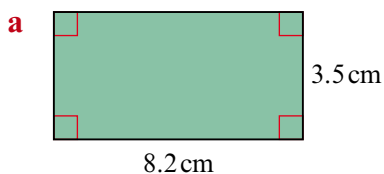**b** How can James arrange the seven tiles so that the resulting shape has the smallest possible perimeter?
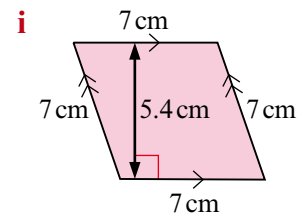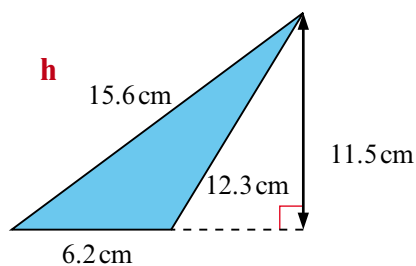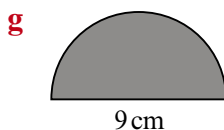
3 Find the perimeter of each shape.

a

20 cm

40 cm

b

10 cm

13 cm   13 cm

c

3 cm   3 cm

7 cm

12 cm

d

4 cm

4 cm

e

10 cm

10 cm   10 cm

10 cm

f

8 cm

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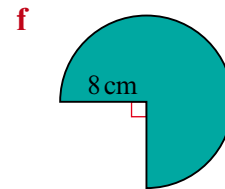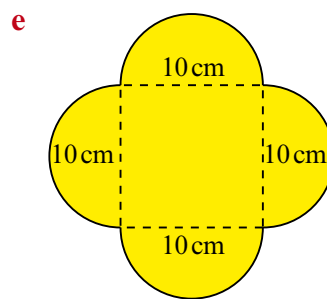
explanation 2

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4 Look at each shape.

  i Find its perimeter.   **ii** Find its area.

a

3.5 cm

8.2 cm

b

13 cm

5 cm

8.2 cm

c

3 cm

d

4.8 cm

4.8 cm

e

12 cm

10 cm   8 cm   10 cm

18 cm

f

10.4 cm

8 cm   6.5 cm   8 cm

10.4 cm

g

9 cm

h

15.6 cm

11.5 cm

12.3 cm

6.2 cm

i

7 cm

7 cm   5.4 cm   7 cm

7 cm
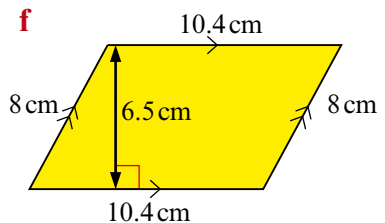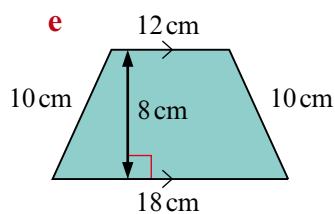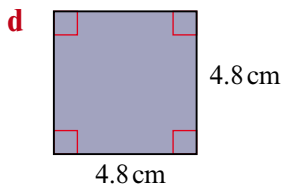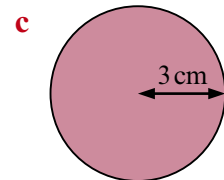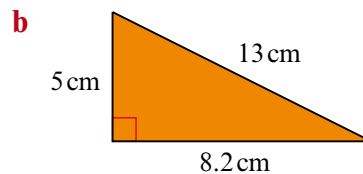
explanation 3

5 Find the area of each of these shapes.

a

7 cm

4 cm

9 cm

12 cm

b

10 m

8 m

2 m

6 m

6 m

20 m

c

6 cm

7 cm

4 cm

d

3 cm   3 cm

7 cm

12 cm
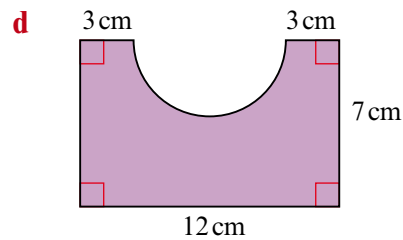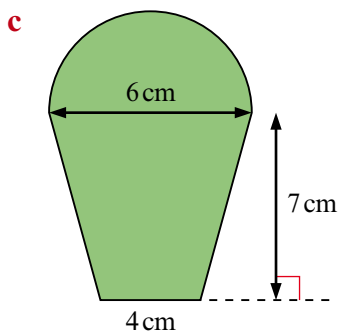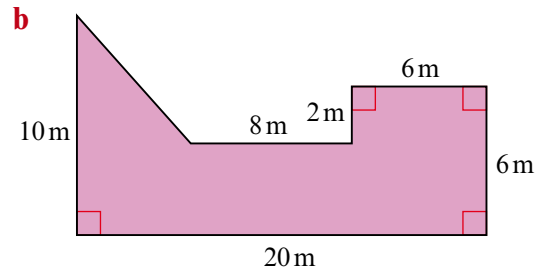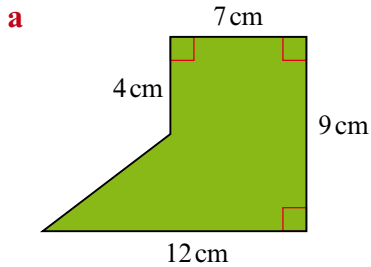
6 Find the area of the shaded part of each shape.

a

8 m

9 m

9 m

b

5 cm

10 cm

c

50 m   60 m

100 m

d

9 cm

15 cm

14.8 cm

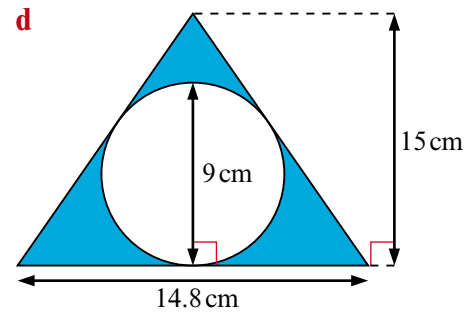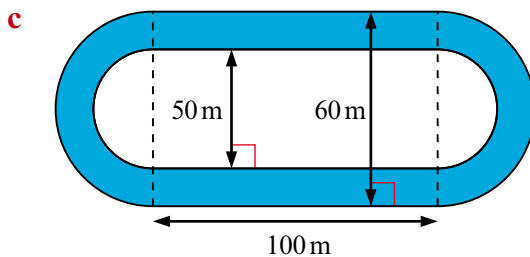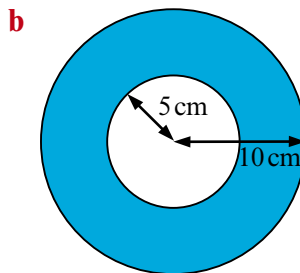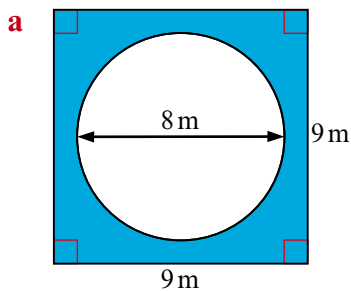**7** Angela has a rug that is in the shape of a rectangle with a semi-circle at either end. She wants to put some tape all the way around the edge of the rug. The tape costs 78p per metre. The shop will only sell the tape in multiples of 0.5 m.

What is the total cost of the tape?

0.84 m

1.8 m
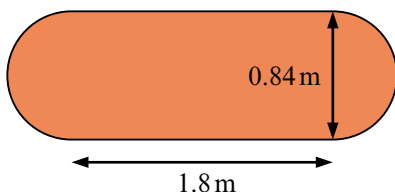
8 A farmer wants to sell his field. He wants more than £24 per square metre.
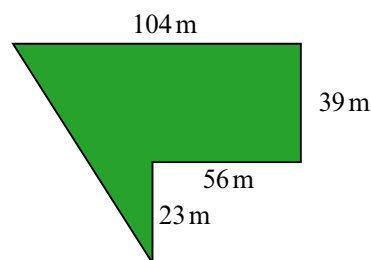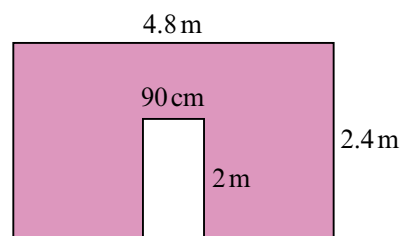
Ms Howarth offers him a total of £90 000 for the field.

Should the farmer accept this offer? Give an explanation for your answer.

104 m

39 m

56 m

23 m

9 Sunil is painting a wall in his house.

He wants to buy enough paint to cover the wall but not the door.

A small tin of paint will cover $13\,m^2$.

Will there be enough paint in a small tin? Give an explanation for your answer.

4.8 m

90 cm

2.4 m

2 m

10 Mike wants to cut as many circles of radius 6 cm as possible out of a rectangular piece of card that measures 36 cm by 60 cm.

a   How many circles can he cut out of the card?

b   How much card will be wasted?