

Equivalent lengths – m and cm

- 1** There are 100 centimetres (cm) in 1 metre (m).
Use the bar models to complete the sentences.

1 m
100 cm

a)

1 m	1 m	1 m

There are cm in 3 m.

b)

1 m	1 m	1 m	1 m	1 m	1 m

There are cm in 6 m.

c)

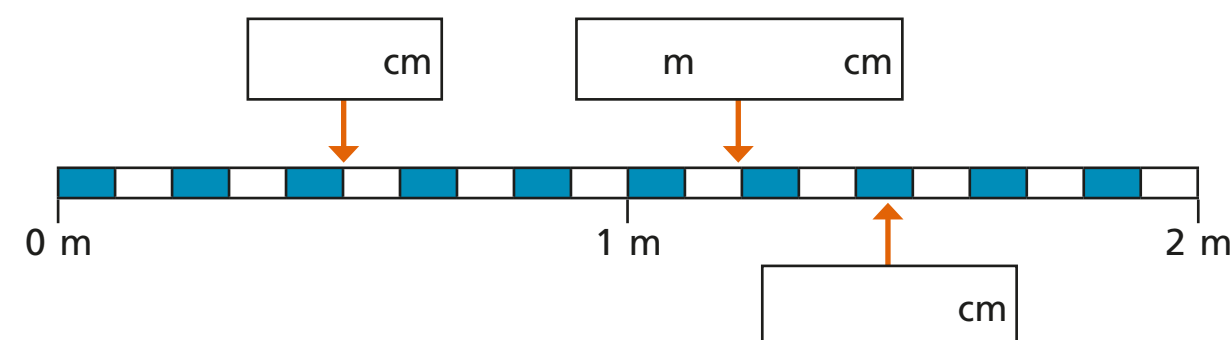
100 cm	100 cm	100 cm	100 cm	100 cm

There are 500 cm in m.

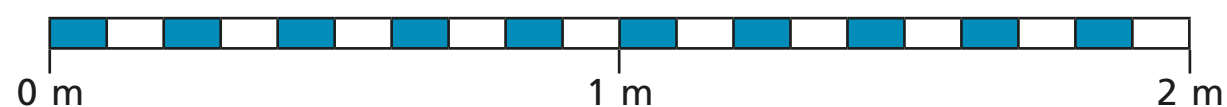
- 2** Complete the table to show equivalent lengths and continue the pattern.

cm	m and cm
310 cm	3 m and 10 cm
320 cm	m and cm
330 cm	m and cm
cm	3 m and 40 cm
cm	3 m and 50 cm
cm	m and cm
cm	m and cm

- 3** Write the missing measurements.

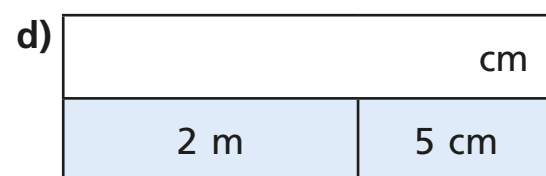
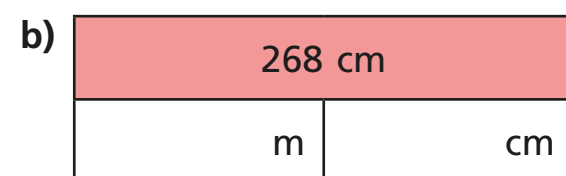
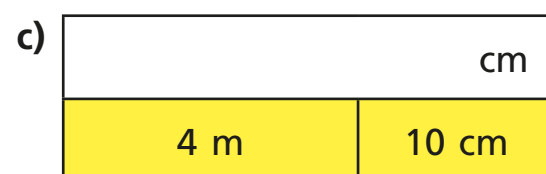
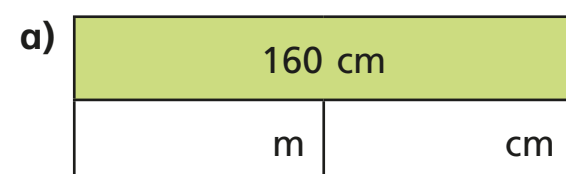


- 4 Draw an arrow to show the position of each measurement.



A	B	C	D
20 cm	0 m 75 cm	130 cm	1 m 65 cm

- 5 Complete the bar models.



- 6 Complete the sentences.

a) 240 cm = m and cm

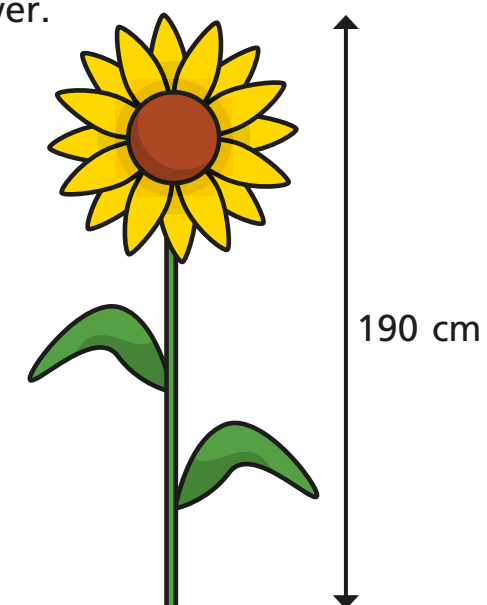
b) 319 cm = m and cm

c) 508 cm = m and cm

d) 2 m and 15 cm = cm

e) 8 m and 3 cm = cm

- 7 Here is Huan's sunflower.



Dani's sunflower is 2 m and 30 cm.

Tom's sunflower is exactly halfway between Huan's and Dani's.

How tall is Tom's sunflower?

Write your answer in metres and centimetres.

m and cm



Equivalent lengths – mm and cm

- 1 There are 10 millimetres (mm) in 1 centimetre (cm).
Use the bar models to complete the sentences.

1 cm
10 mm

a)

1 cm	1 cm	1 cm

There are mm in 3 cm.

b)

1 cm	1 cm	1 cm	1 cm	1 cm	1 cm	1 cm

There are mm in 7 cm.

c)

10 mm	10 mm	10 mm	10 mm

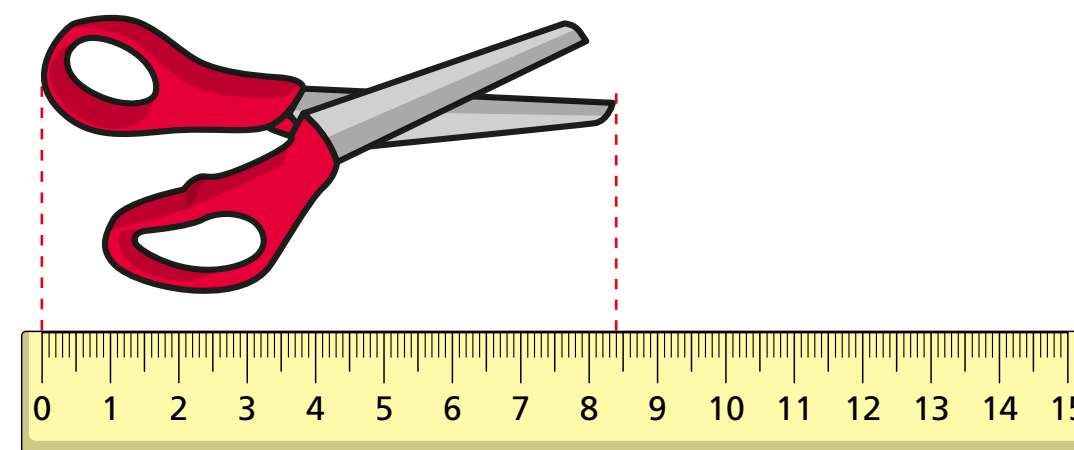
There are 40 mm in cm.

- 2 Match the equivalent lengths.

1 cm 3 mm	3 cm 1 mm	30 mm	33 mm	30 cm
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300 mm	13 mm	31 mm	3 cm 0 mm	3 cm 3 mm
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- 3 How long are the scissors?



The scissors are cm and mm long.

The scissors are mm long.

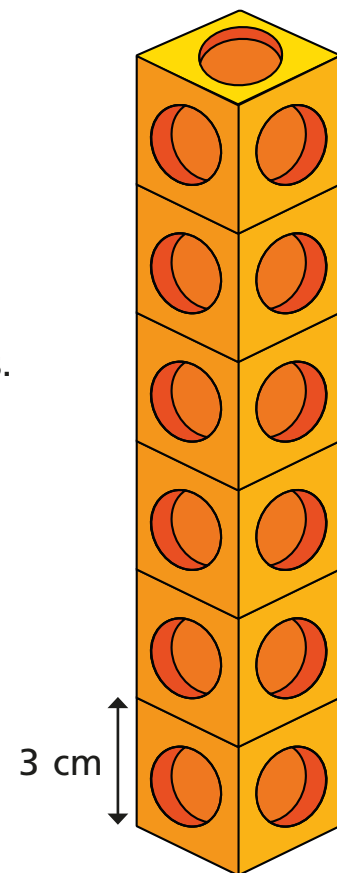
- 4 Find three items in your classroom.
Measure them and complete the table.
One has been done for you.

Item	Length in cm and mm	Length in mm
toy car	9 cm 6 mm	96 mm

- 5 Filip and Kim are building towers using cubes.
Each cube is 3 cm high.

- a) Filip uses 6 cubes.
How tall is Filip's tower?
Give your answer in millimetres.

Filip's tower is mm tall.

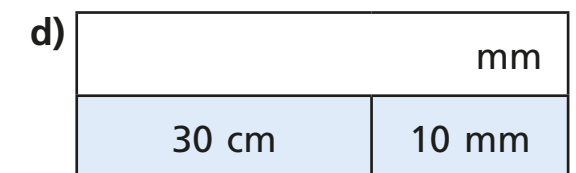
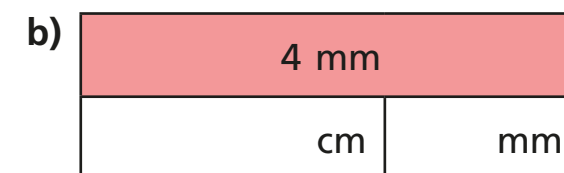
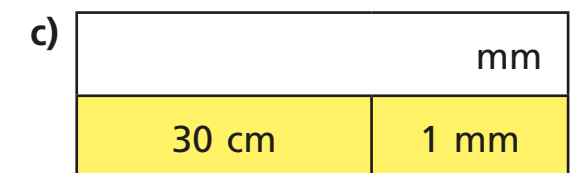
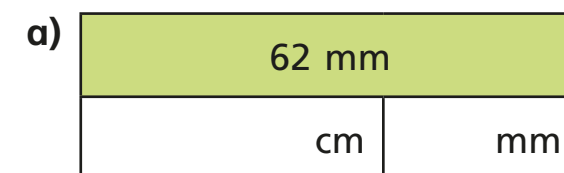


- b) Kim's tower is 300 mm tall.

How many cubes does she use?

Kim uses cubes.

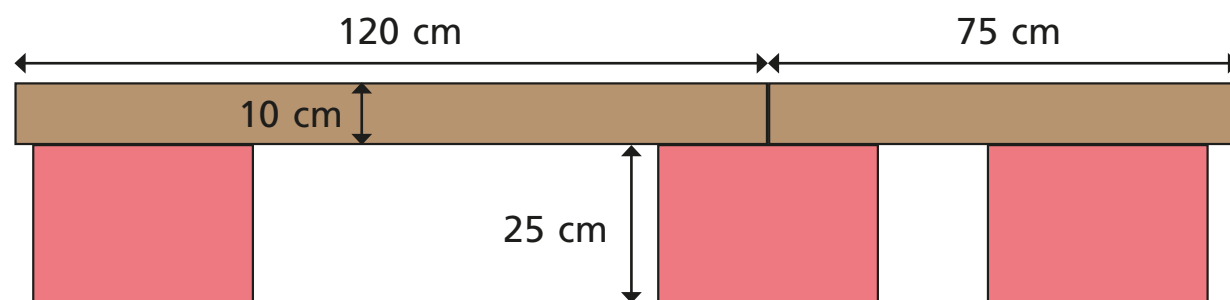
- 6 Complete the bar models.



Add lengths



- 1 Scott builds a bridge using planks.



- a) What is the total length of his bridge?

 cm

- b) What is the height of his bridge?

 cm

- 2 Complete the additions.

a) $25 \text{ cm} + 75 \text{ cm} = \boxed{} \text{ m}$

b) $10 \text{ cm} + 50 \text{ mm} = \boxed{} \text{ cm}$

c) $1 \text{ m } 20 \text{ cm} + \boxed{} \text{ cm} = 2 \text{ m}$

d) $52 \text{ mm} + \boxed{} \text{ mm} = 6 \text{ cm}$

- 3 Brett is 115 cm tall.

His brother is 20 cm taller.

How tall is Brett's brother?

Write your answer in metres and centimetres.

 m and cm

- 4 Dora builds a tower that measures 1 m and 5 cm.

Annie builds a tower that measures 80 cm.

Dexter builds a tower that measures 95 cm.

They put their towers together to make one high tower.

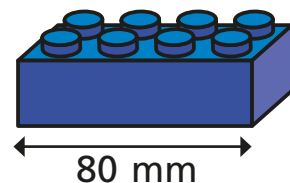
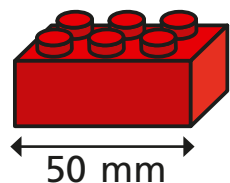
How tall is their new tower?

The new tower is cm tall.

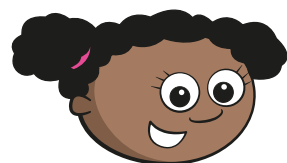
This is the same as m and cm.



- 5 Red bricks are 50 mm long.
Blue bricks are 80 mm long.

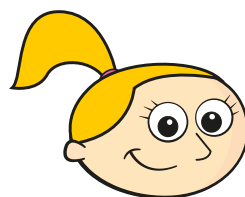


- a) Whitney and Eva make patterns using the bricks.
How long is each pattern?
Give your answers in centimetres.



Whitney

Whitney's pattern is cm long.



Eva

Eva's pattern is cm long.

- b) Draw some red and blue bricks to make a pattern that would be exactly 36 cm long.

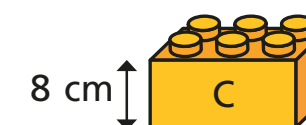
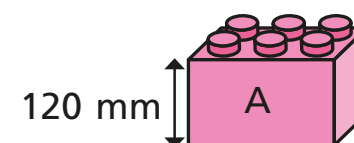
- 6 Jack, Tommy and Alex took part in a hop, skip and jump competition.

Their distances are shown in the table below.

Complete the table to show the total distance each child travelled.

Name	Hop	Skip	Jump	Total
Jack	80 cm	60 cm	1 m 20 cm	
Tommy	70 cm	1 m	1 m 10 cm	
Alex	75 cm	75 cm	1 m	

- 7 Esther builds a tower using some bricks.
Her tower is 24 cm tall.
Which bricks could she have used?

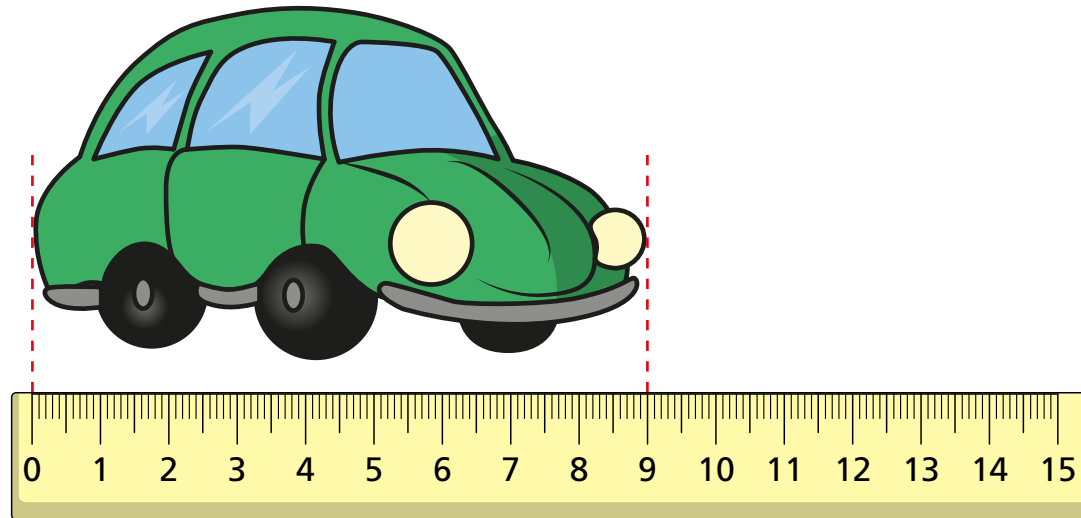


How many different answers can you find?

Subtract lengths

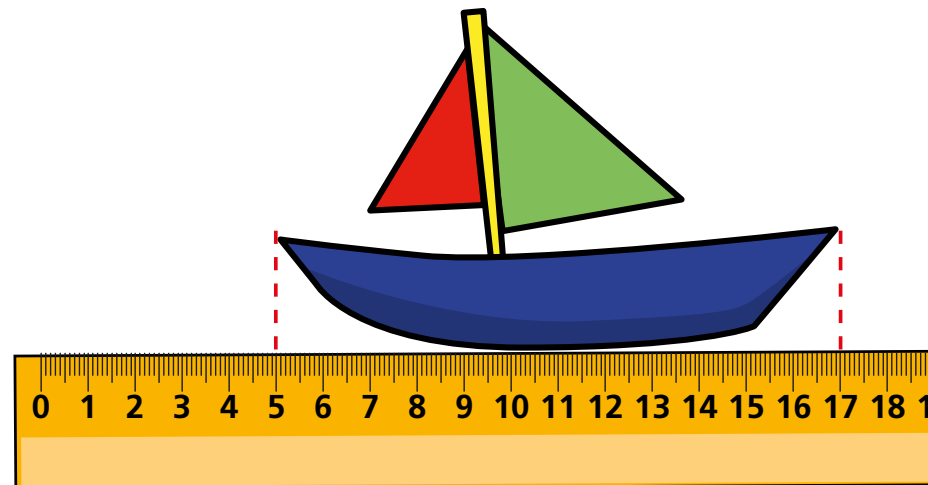
- 1 Complete the sentences to describe the lengths of the objects.

a)



The toy car is mm long.

b)

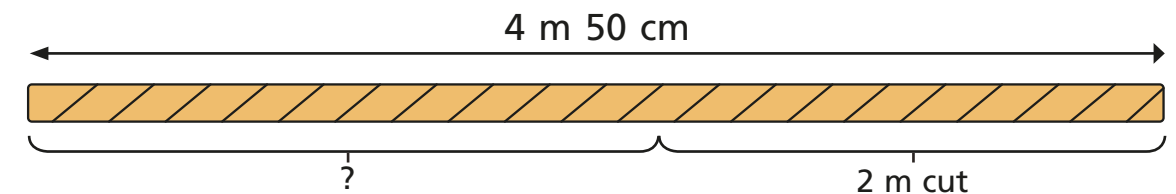


The toy boat is cm long.

c) The toy boat is cm longer than the toy car.

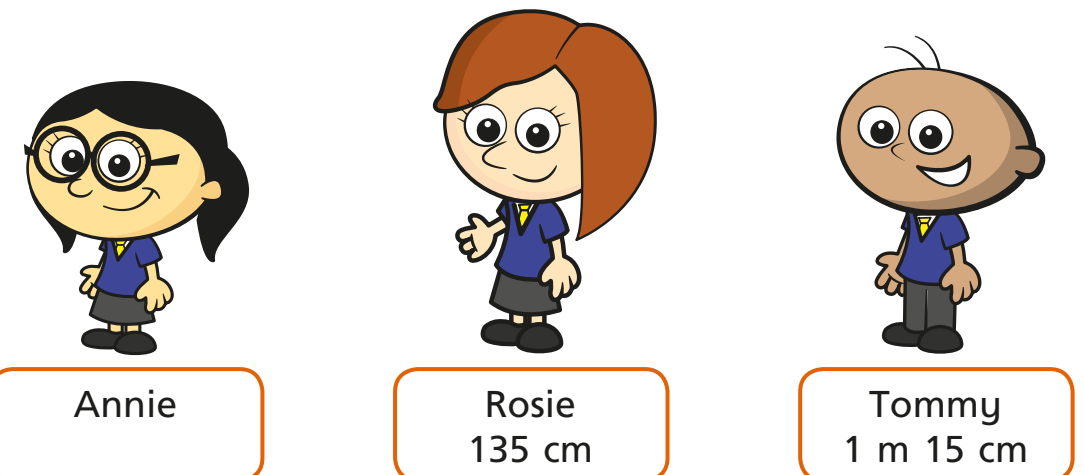
The toy car is mm shorter than the toy boat.

- 2 Jack's rope is 4 m 50 cm long.
He uses 2 m to make a swing.
How long is his rope now?



Jack's rope is now m and cm long.

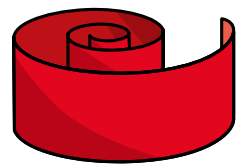
- 3 Tommy, Rosie and Annie each measure their height.



- a) What is the difference in height between Tommy and Rosie?

- b) Annie is 30 mm shorter than Rosie. What is Annie's height?

- 4 Nijah buys 5 m of ribbon.
She uses 78 cm of the ribbon to decorate a bag.
How much ribbon does she have left?



m and cm

- 5 Complete the number sentences.

a) $2 \text{ m} - 50 \text{ cm} = \text{ } \text{cm}$

b) $85 \text{ mm} - 2 \text{ cm} = \text{ } \text{mm}$

c) $9 \text{ cm } 5 \text{ mm} - 20 \text{ mm} = \text{ } \text{cm and } \text{ } \text{mm}$

d) $100 \text{ mm} - \text{ } \text{cm} = 6 \text{ cm}$

- 6 Huan has a 10 m ball of string.

He uses 50 cm to replace his shoelace.

He uses some more of his string to make a bow for his arrows.

He has 7 m and 45 cm of string left.

How much string did Huan use to make his bow?



m and cm

- 7 Fill in the empty boxes so that each row and column adds up to 2 m.

50 cm		50 cm
1 m 15 cm		
	85 cm	

Talk about what you did with a partner.

Are your answers the same?

Create your own problem like this using a different total.

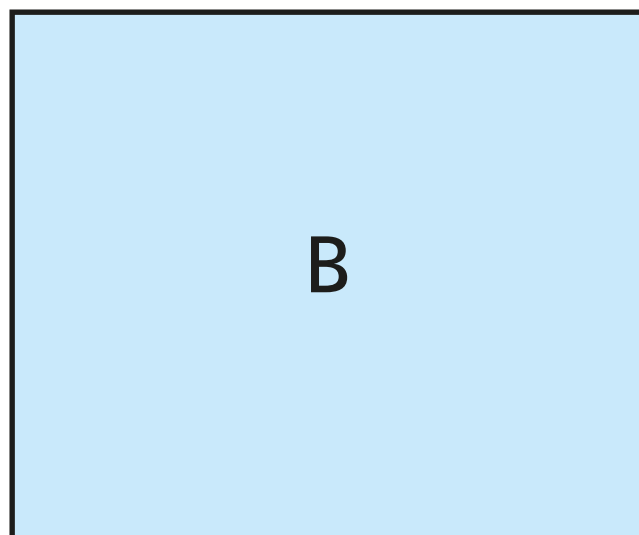
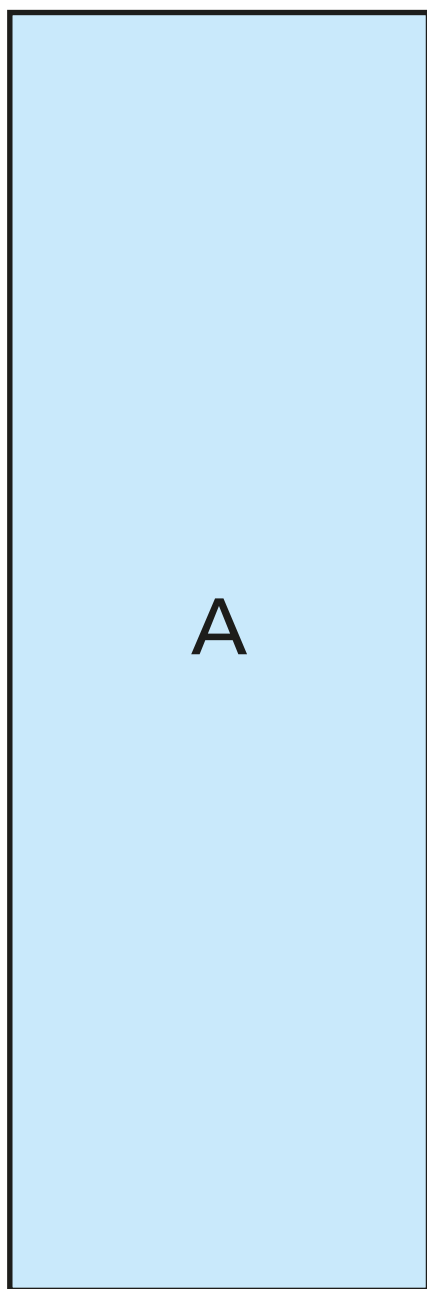
Ask a partner to find the answer.



Measure perimeter



1 Here are two rectangles.



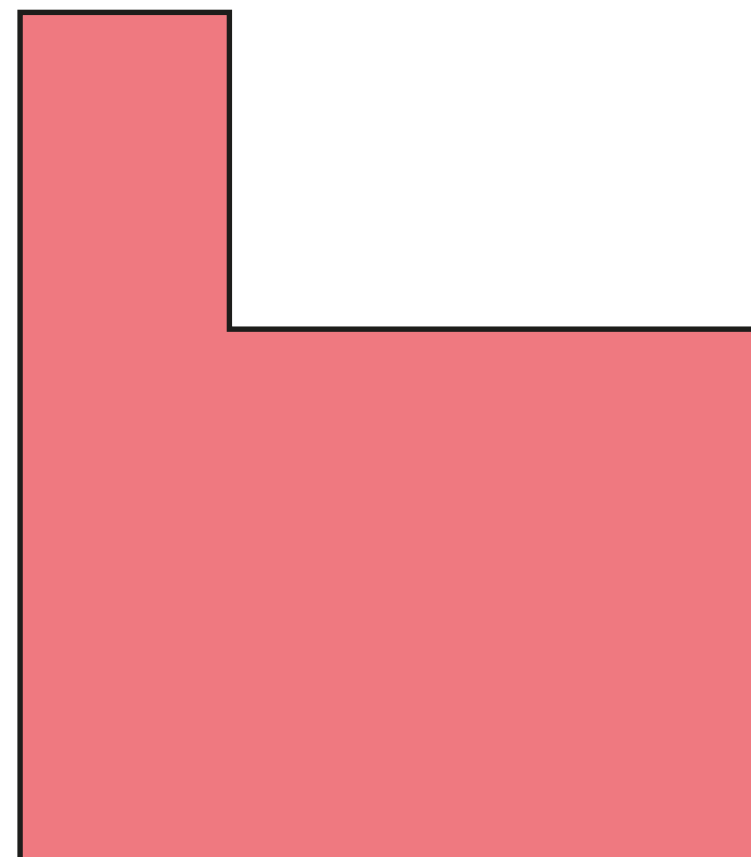
Use a piece of wool to measure the perimeter of each rectangle.

How much wool did you need for each one?

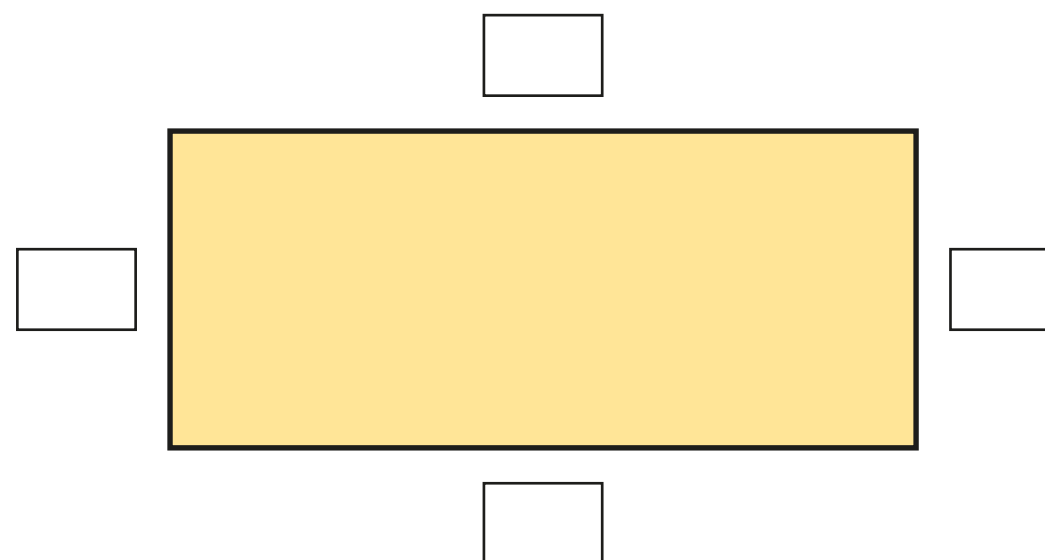
Give units with your answer.

A = B =

2 Use a piece of wool to measure the perimeter of the hexagon.
How much wool did you need? Give units with your answer.



3 a) Measure each side of the rectangle and label it.

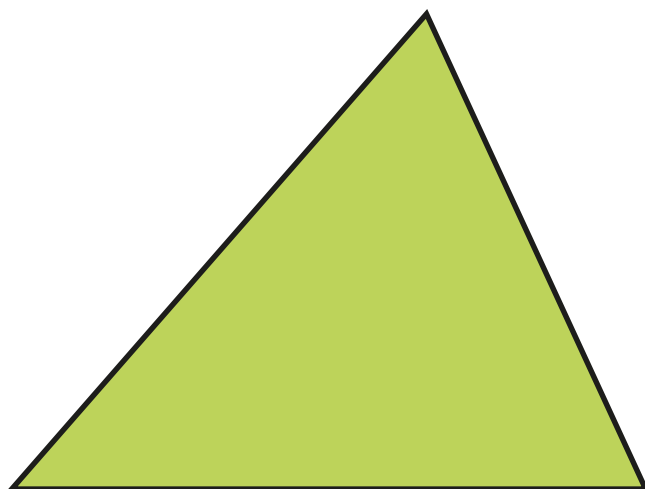


b) What is the perimeter of the rectangle?



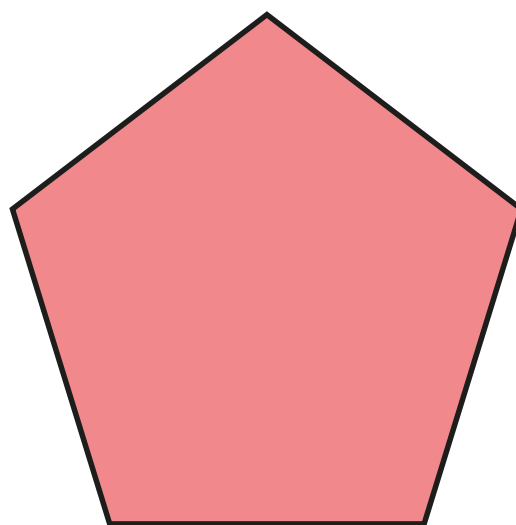
4 Measure the perimeter of each shape.

a)



perimeter =

b)

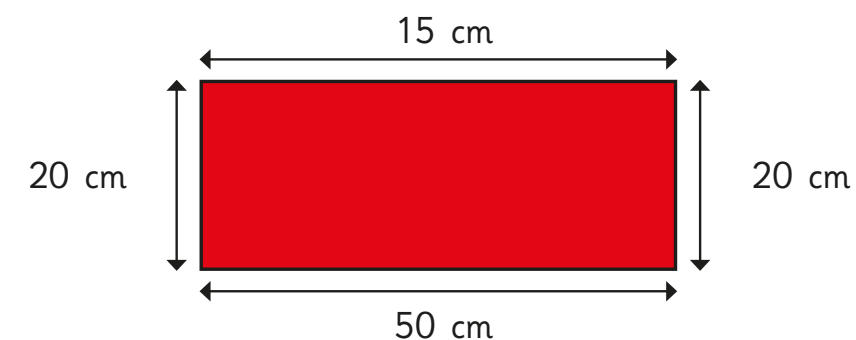


perimeter =

5 Draw a triangle with a perimeter of 15 cm.



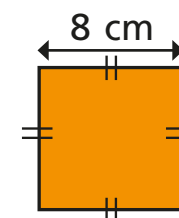
6 Aisha is working out the perimeter of a rectangle. She measures the length of all 4 sides and labels the rectangle.



How do you know that Aisha's measurements are wrong?

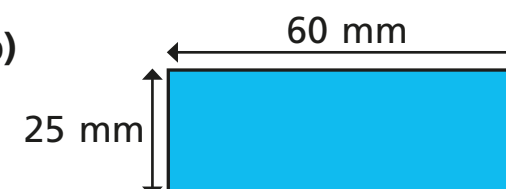
7 Is it possible to work out the perimeter of each shape? Circle your answer.

a)



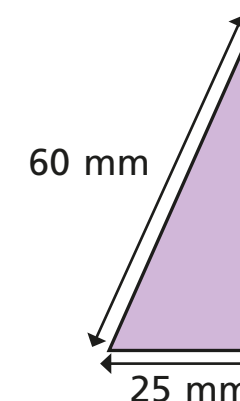
yes no

b)



yes no

c)



yes no

How do you know whether you can or cannot find the perimeter of each shape?

Talk about it with a partner.



Kilometres



- 1 There are 1,000 metres (m) in 1 kilometre (km).
Use the bar models to complete the sentences.

1 km
1,000 m

a)

1 km	1 km

There are m in 2 km.

b)

1 km	1 km	1 km

There are m in 3 km.

c)

1,000 m	1,000 m	1,000 m	1,000 m	1,000 m

There are 5,000 m in km.

- 2 Complete the statements.

- a) 1,000 m = km d) km = 4,000 m
b) 9,000 m = km e) 7 km = m
c) m = 8 km f) 3 = 3,000

- 3 Complete the statements.

- a) 6,000 m = km
6,100 m = km m
6,200 m = km m
6,450 m = km m
b) 4,300 m = km m
5,300 m = km m
6,300 m = km m
c) m = 2 km 600 m
3 km 200 m = m
9 km 500 m = m
9 km 50 m = m

4 Complete the bar models.

a)

1 km	
m	700 m

b)

1 km		
m	300 m	400 m

c)

3 km		
800 m	1 km	m

d)

km	
2,200 m	2,800 m

e)

1 km	
m	400 m

f)

2 km	
m	1,600 m

g)

3 km		
800 m	1,200 m	km

h)

km		
900 m	3,600 m	$\frac{1}{2}$ km

5 Write $>$, $<$ or $=$ to make the statements correct.

a) 700 m 6 km

b) 5,000 m 5 km

c) 3 km 2 km 600 m

d) $\frac{1}{2}$ km 500 m

6 One morning, Filip walks 6 km.
In the afternoon, he walks another 3,800 m.
How far does Filip walk altogether?

7 Complete the table.

Pupil	How far they live from school (km)	How far they live from school (m)
Dani	2 km	
Scott		7,000 m
Kim	$\frac{1}{2}$ km	
Nijah		2,500 m
Teddy	$1\frac{3}{4}$ km	

8 Aisha lives $1\frac{1}{2}$ km away from school.

a) How many metres is that?

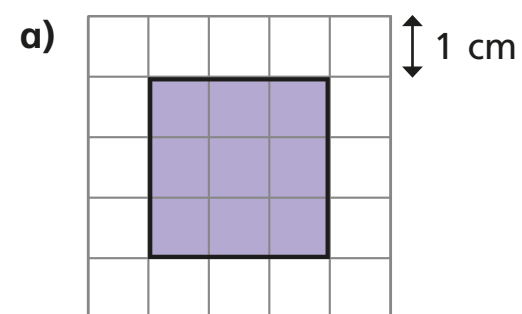
She walks to and from school 5 days a week.

b) Does Aisha walk more than 10 km in a week?
Show your workings.

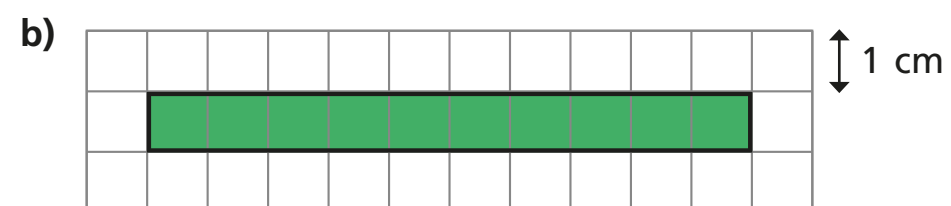


Perimeter on a grid

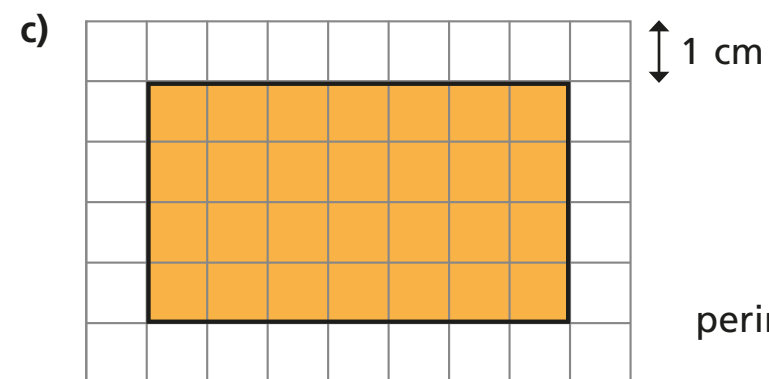
1 Work out the perimeter of each rectangle.



perimeter =

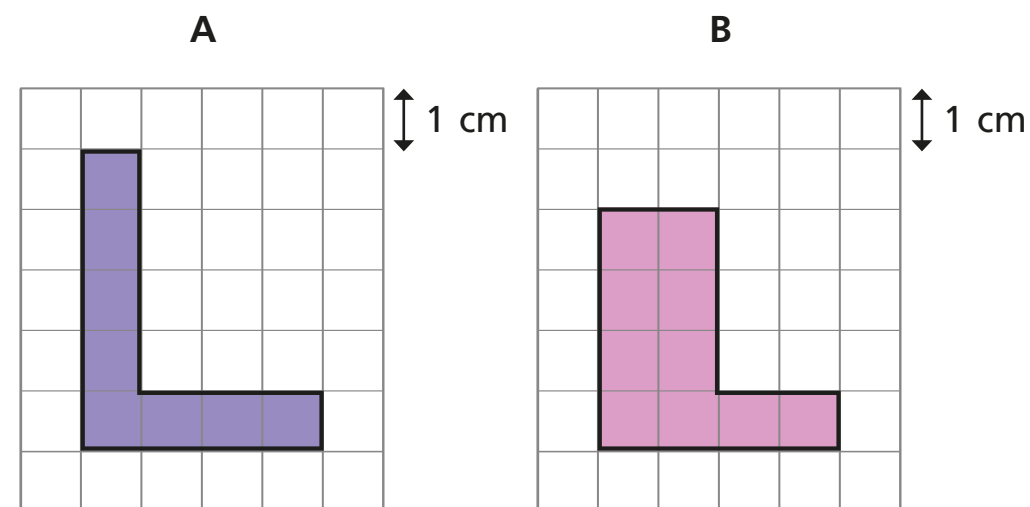


perimeter =



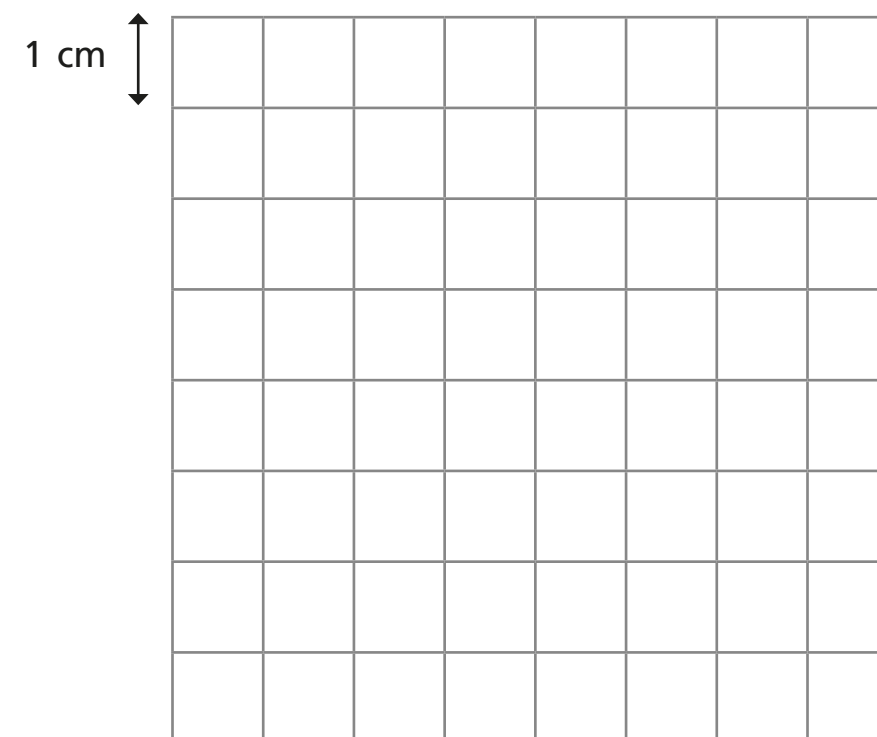
perimeter =

2 Which of the hexagons has the greatest perimeter?
Show all your workings.

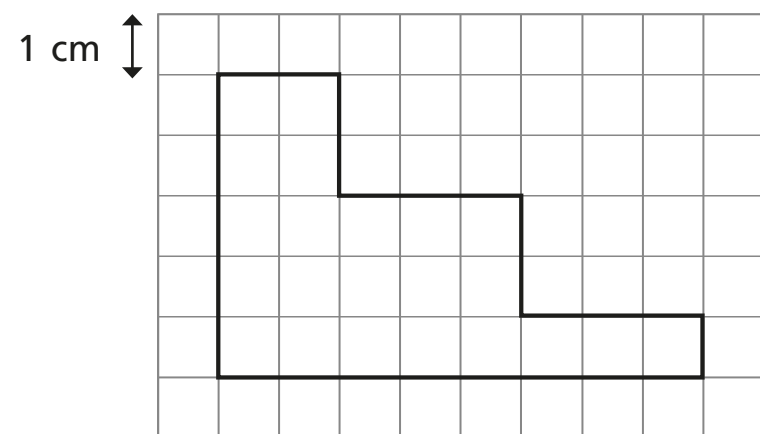


Shape ____ has the greatest perimeter.

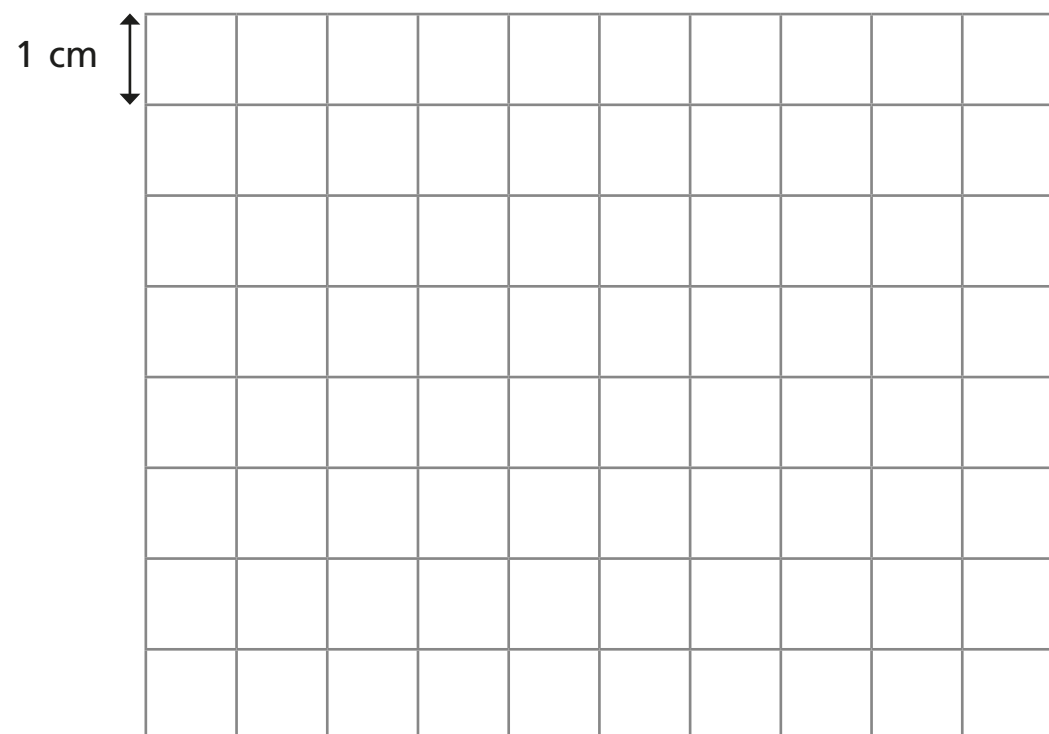
3 Draw two different rectangles with a perimeter of 14 cm.



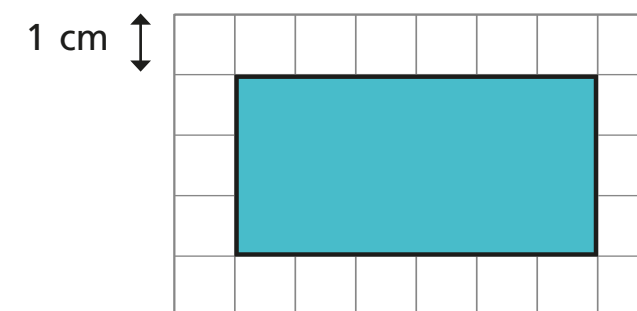
- 4 Work out the perimeter of the shape.



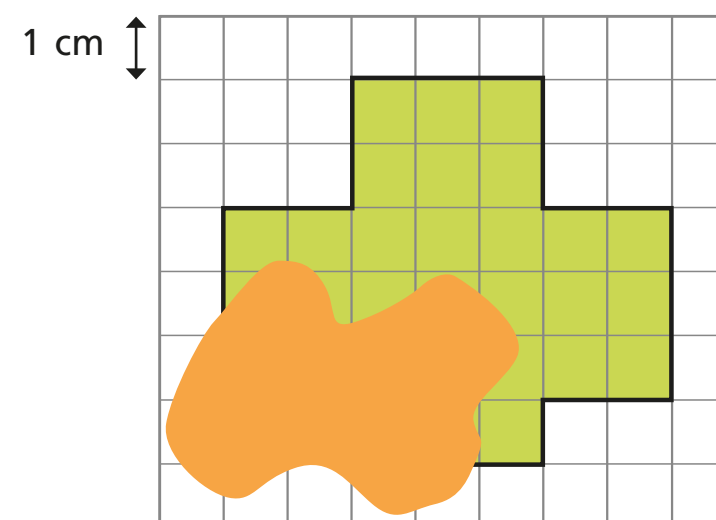
- 5 Draw two shapes with a perimeter of 20 cm.
Your shapes should **not** be rectangles.



- 6 Work out the perimeter of the rectangle.



- 7 A shape is drawn on a square grid.
Part of the shape is hidden.



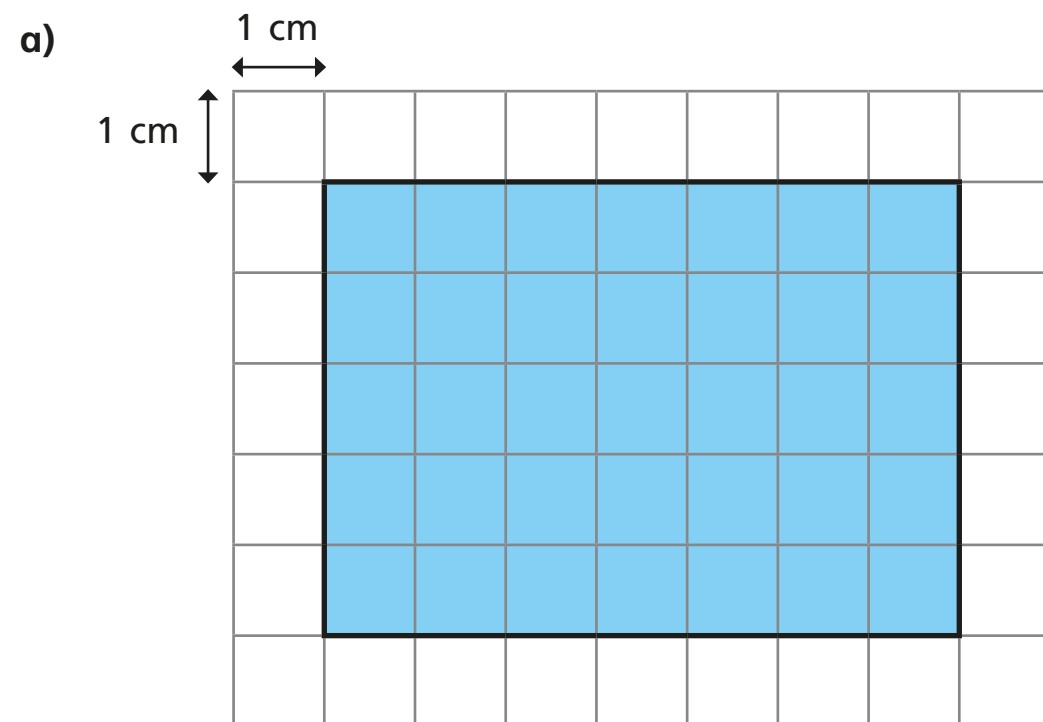
What could the perimeter of the shape be?

Is there more than one answer?

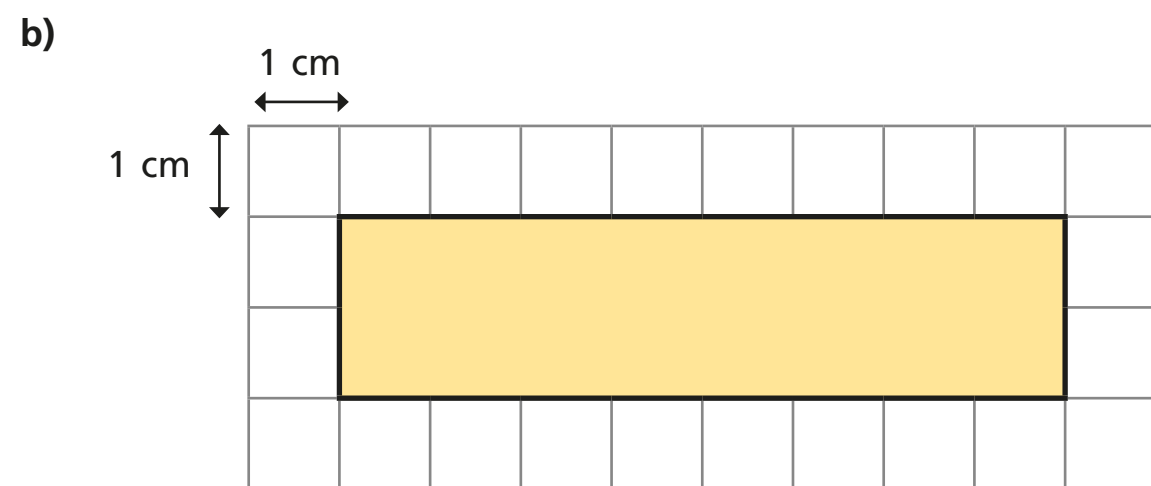


Perimeter of a rectangle

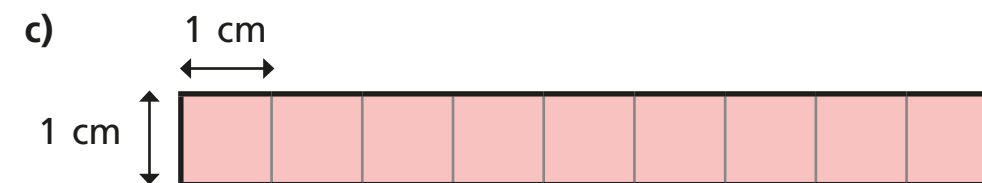
1 Work out the perimeter of each rectangle.



$$\square \text{ cm} + \square \text{ cm} + \square \text{ cm} + \square \text{ cm} = \square \text{ cm}$$

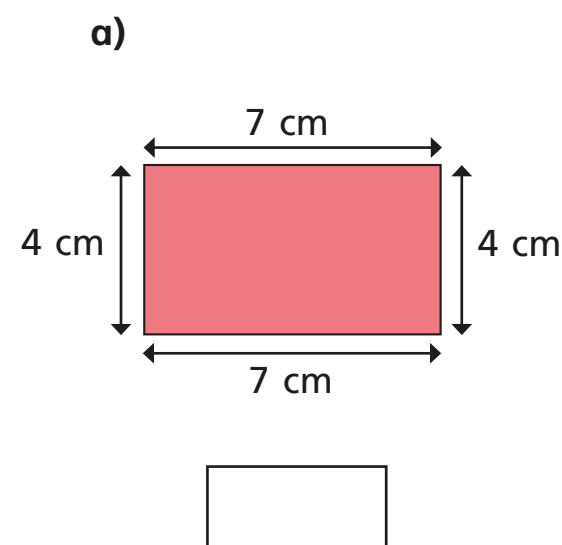


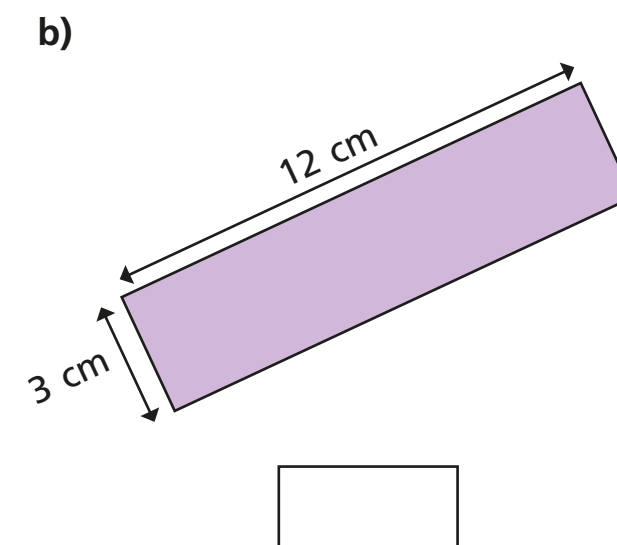
$$\square \text{ cm} + \square \text{ cm} + \square \text{ cm} + \square \text{ cm} = \square \text{ cm}$$

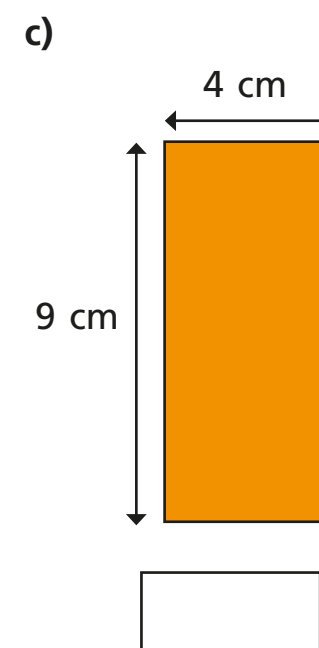


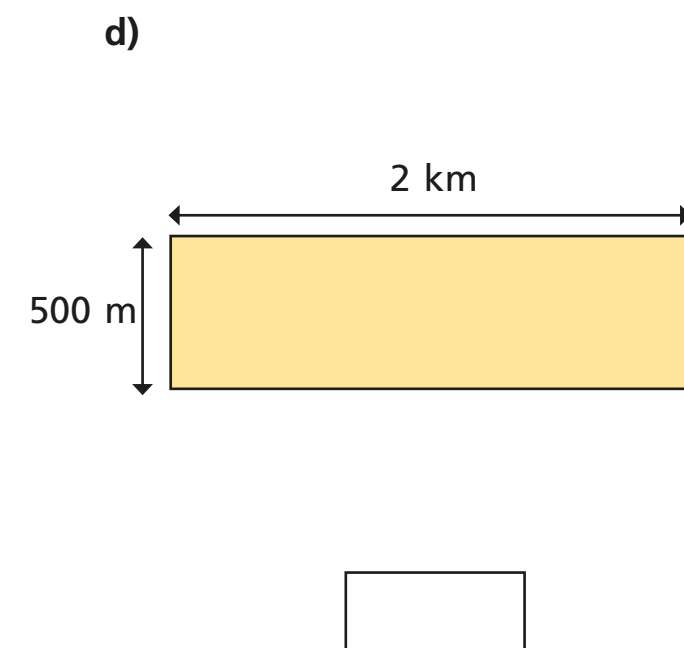
$$\square \text{ cm} + \square \text{ cm} + \square \text{ cm} + \square \text{ cm} = \square \text{ cm}$$

2 Work out the perimeter of the rectangles.



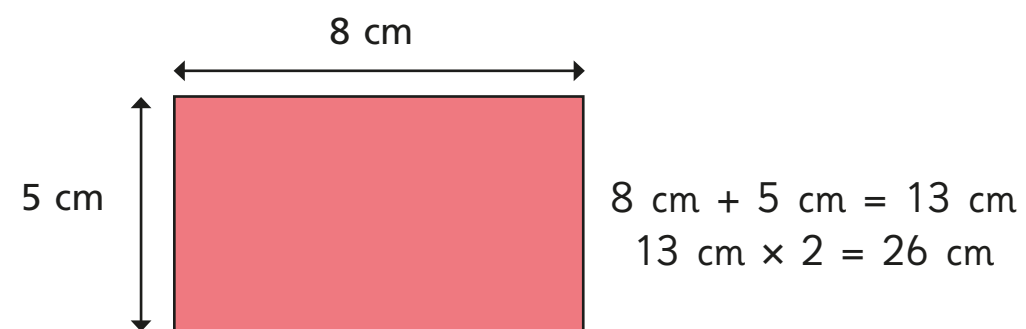






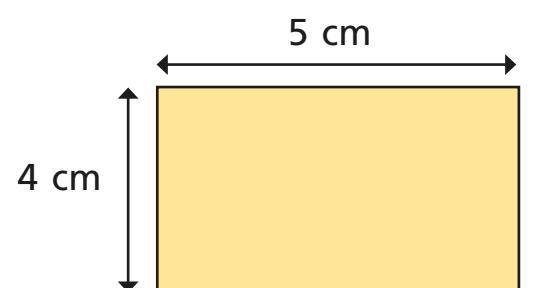


- 3 Tommy is working out the perimeter of some rectangles.



Use Tommy's method to find the perimeter of these rectangles.

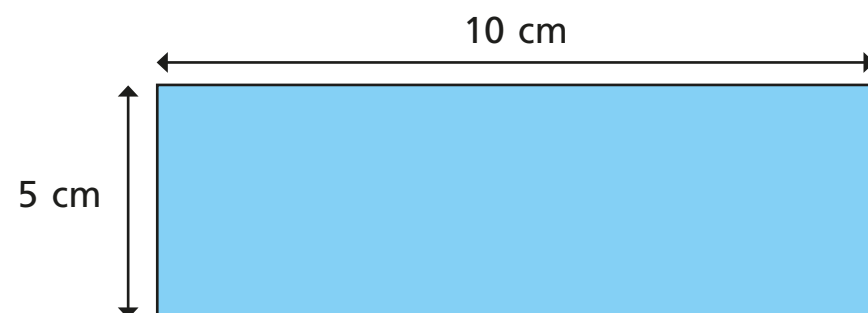
a)



cm + cm = cm

cm $\times$ 2 = cm

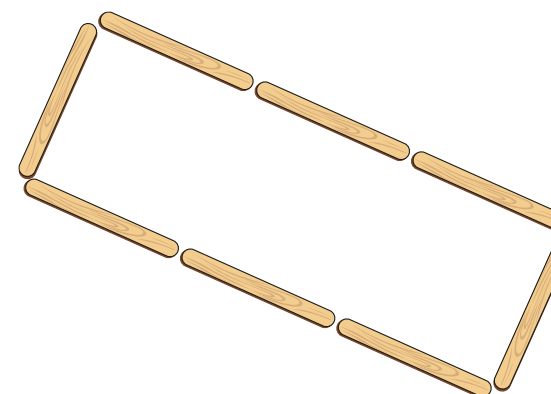
b)



cm + cm = cm

cm $\times$ 2 = cm

- 4 Each lolly stick is 8 cm long.
Find the perimeter of the shape.



- 5 Each of these rectangles has a perimeter of 24 cm.
Work out the missing lengths and label the diagrams.

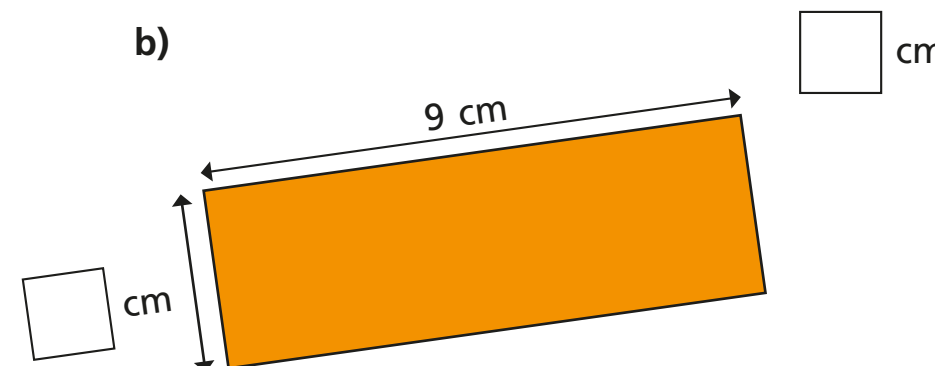
a)



c)



b)

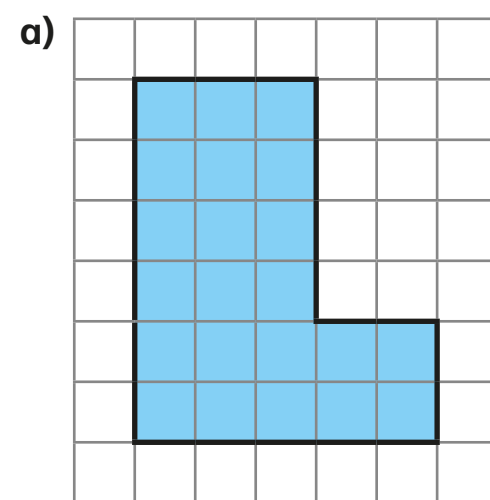


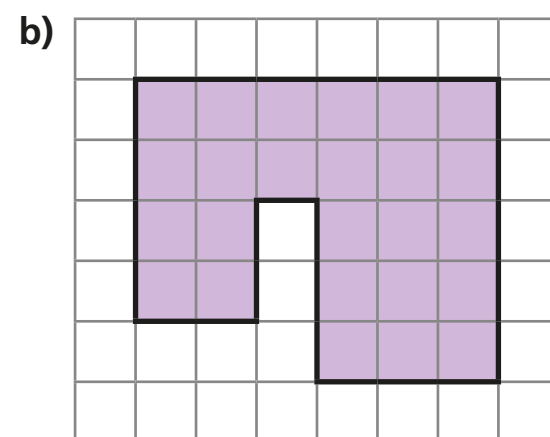
What do you notice?

Find any other rectangles that have the same perimeter.

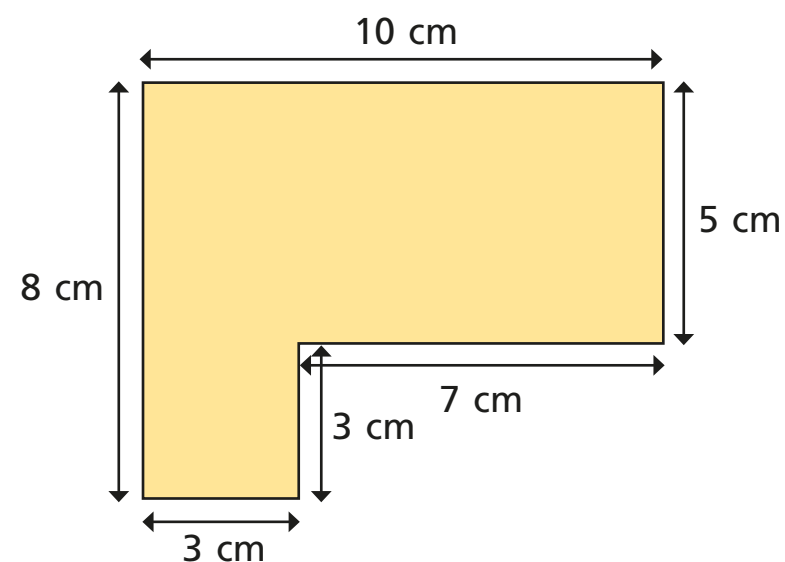
Perimeter of rectilinear shapes

- 1 The length of each square on the grid is 1 cm.
Work out the perimeter of the shapes.

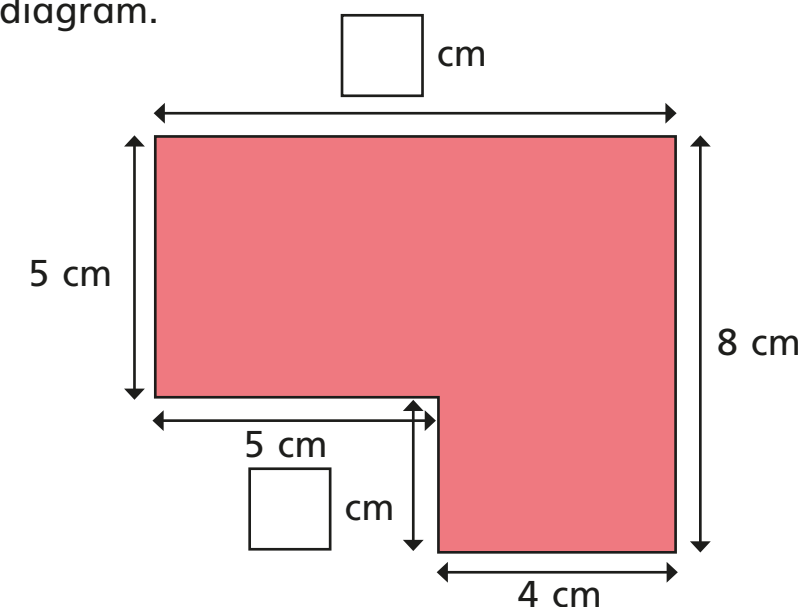




- 2 Work out the perimeter of the shape.

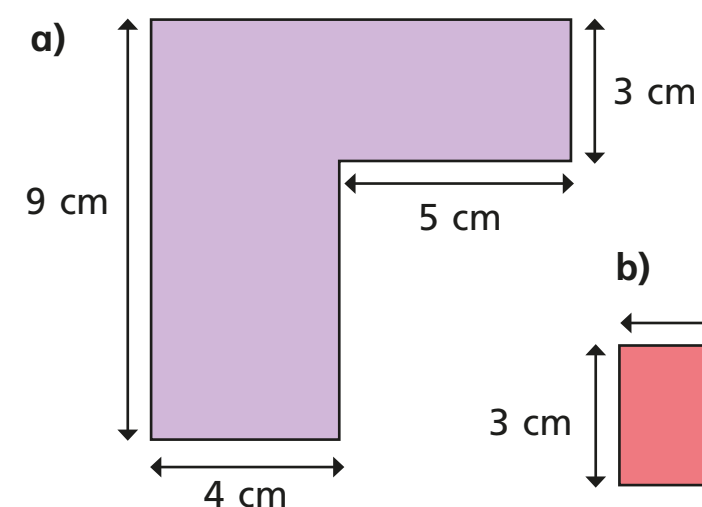


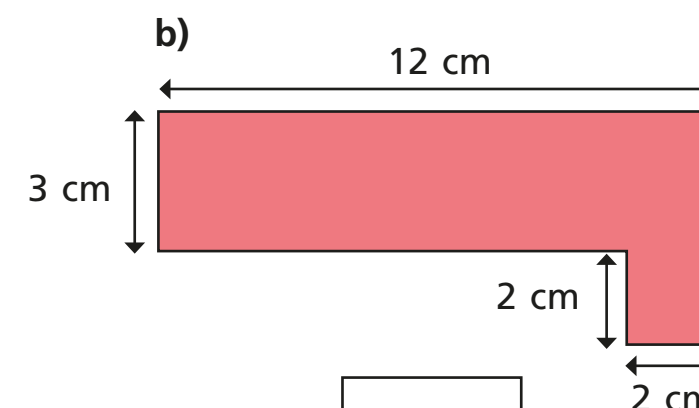
- 3 a) Work out the missing lengths and label them on the diagram.



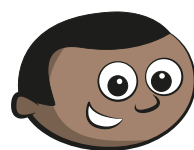
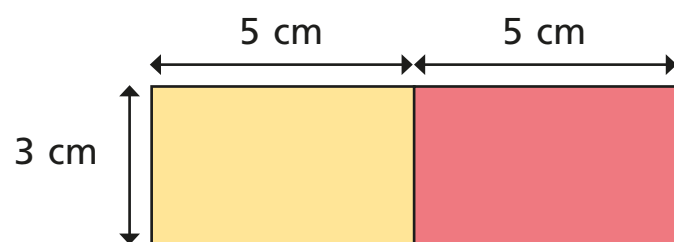
- b) What is the perimeter of the shape?

- 4 Work out the perimeter of each shape.





- 5 Mo puts two 5 cm by 3 cm rectangles next to each other.



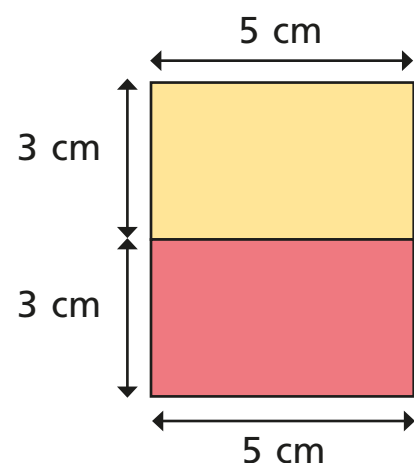
The perimeter of each small rectangle is 16 cm, so the perimeter of my larger rectangle must be $2 \times 16 \text{ cm} = 32 \text{ cm}$.

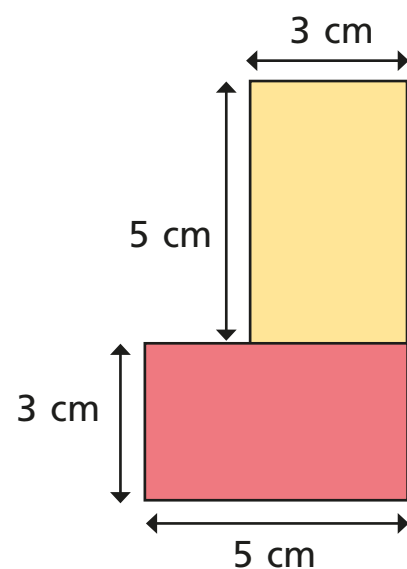
- a) Is Mo correct? _____

Work out the perimeter of the larger rectangle to check your answer.

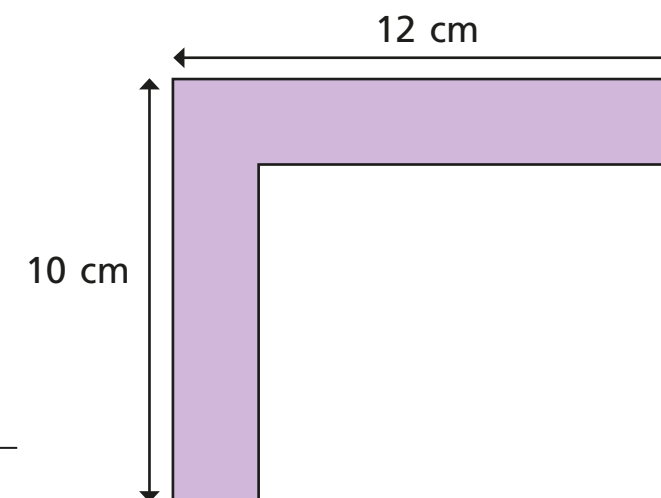
- b) Mo puts the rectangles together in different ways.

Work out the perimeter of each large shape.





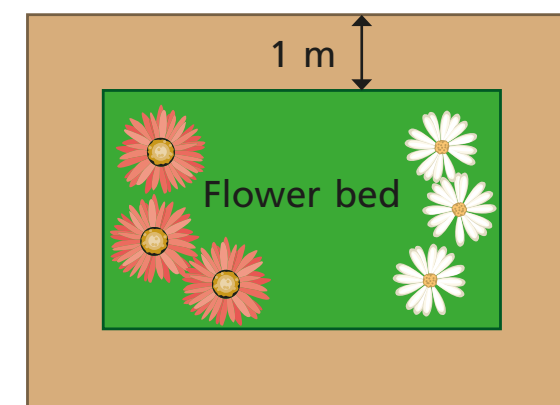
- 6 Dani thinks there isn't enough information to work out the perimeter of the shape.



Is Dani correct? _____

Explain your answer.

- 7 A rectangular flower bed is 5 m long and 3 m wide. The path around the flower bed is 1 m wide.



- a) What is the perimeter of the flower bed?

- b) What is the perimeter of the outside of the path?