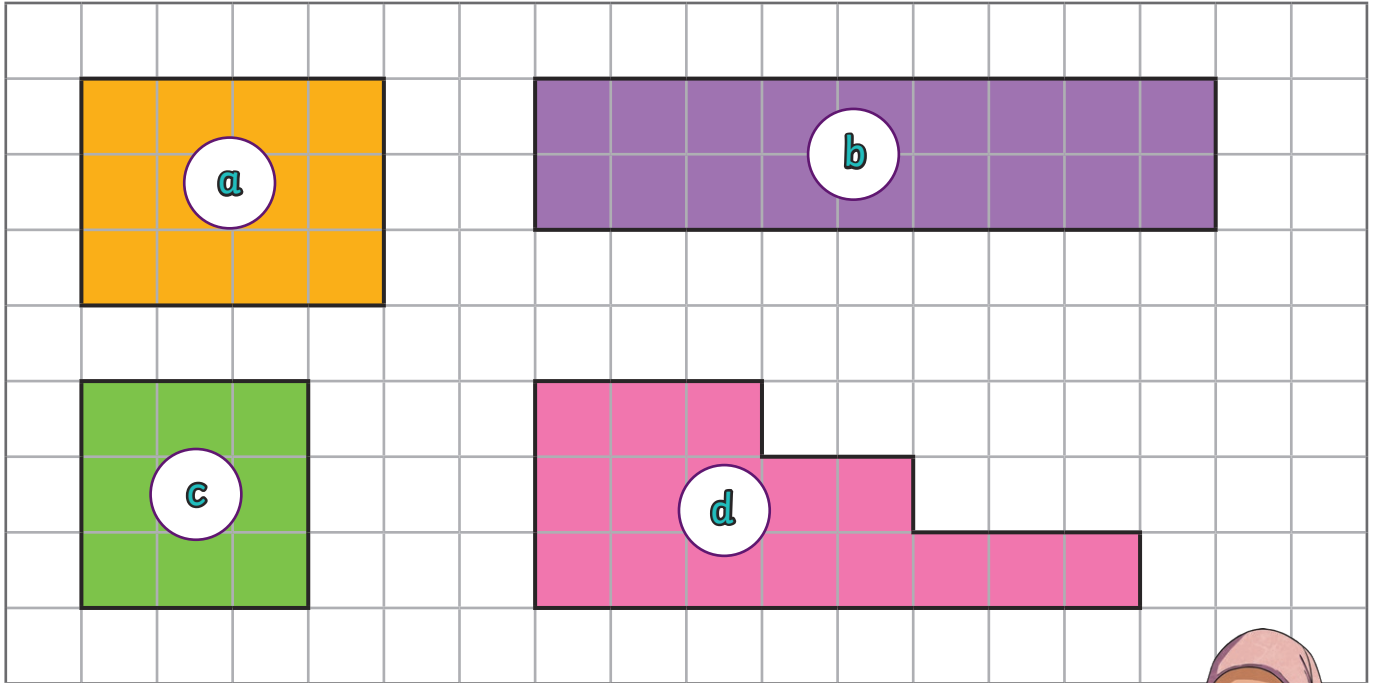


Calculating Perimeter on a Grid

To calculate the perimeters of shapes drawn on a grid.



1) What is the perimeter of these shapes? Mark each square to help you count them.

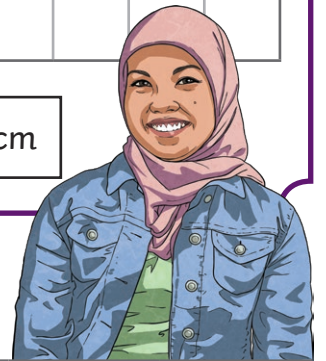


a) _____ cm

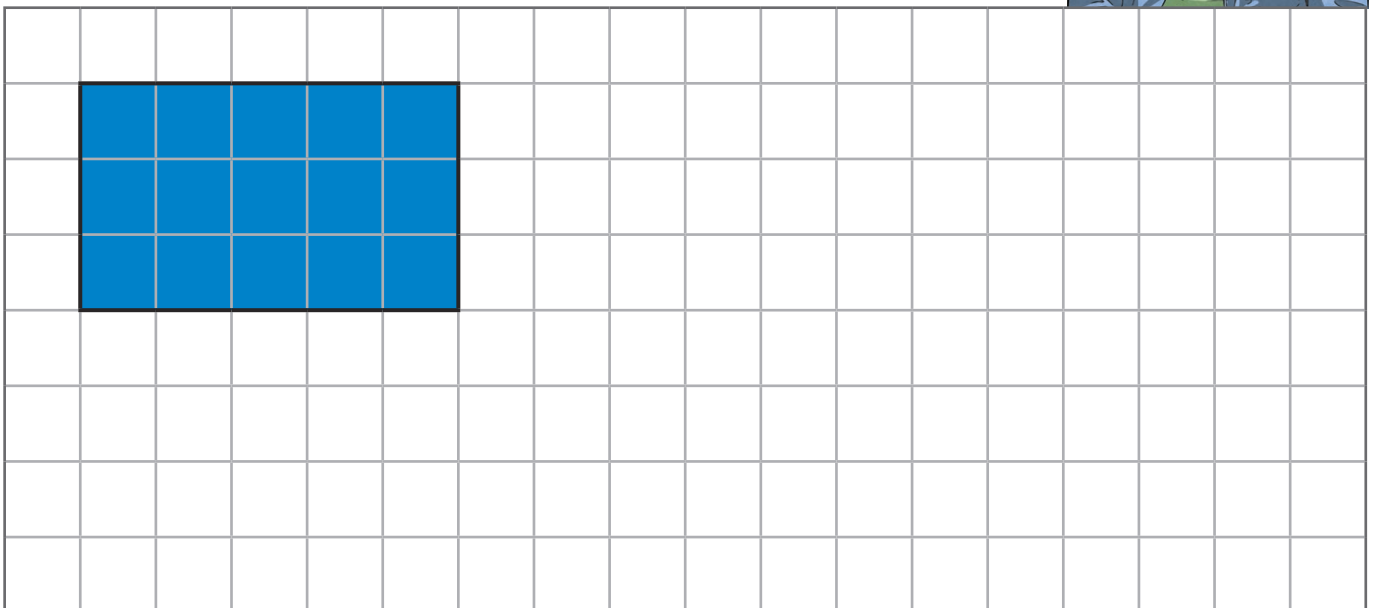
b) _____ cm

c) _____ cm

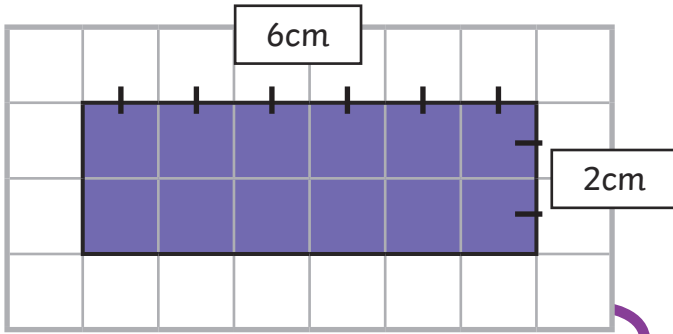
d) _____ cm



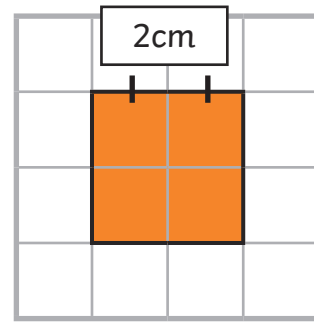
2) Draw 2 different shapes which have the same perimeter as the shape shown.



3) Calculate the perimeter of these shapes, using what we know about rectangles and squares. Two examples are given.



$$\text{Perimeter} = 6\text{cm} + 2\text{cm} + 6\text{cm} + 2\text{cm} = 16\text{cm}$$



$$\text{Perimeter} = 2\text{cm} + 2\text{cm} + 2\text{cm} + 2\text{cm} = 8\text{cm}$$

a

_____ cm

_____ cm

$$\text{Perimeter} = \text{_____ cm} + \text{_____ cm} + \text{_____ cm} + \text{_____ cm} = \text{_____ cm}$$

b

_____ cm

_____ cm

_____ cm

$$\text{Perimeter} = \text{_____ cm} + \text{_____ cm} + \text{_____ cm} + \text{_____ cm} = \text{_____ cm}$$

c

_____ cm

$$\text{Perimeter} = \text{_____ cm} + \text{_____ cm} + \text{_____ cm} + \text{_____ cm} = \text{_____ cm}$$

d

_____ cm

_____ cm

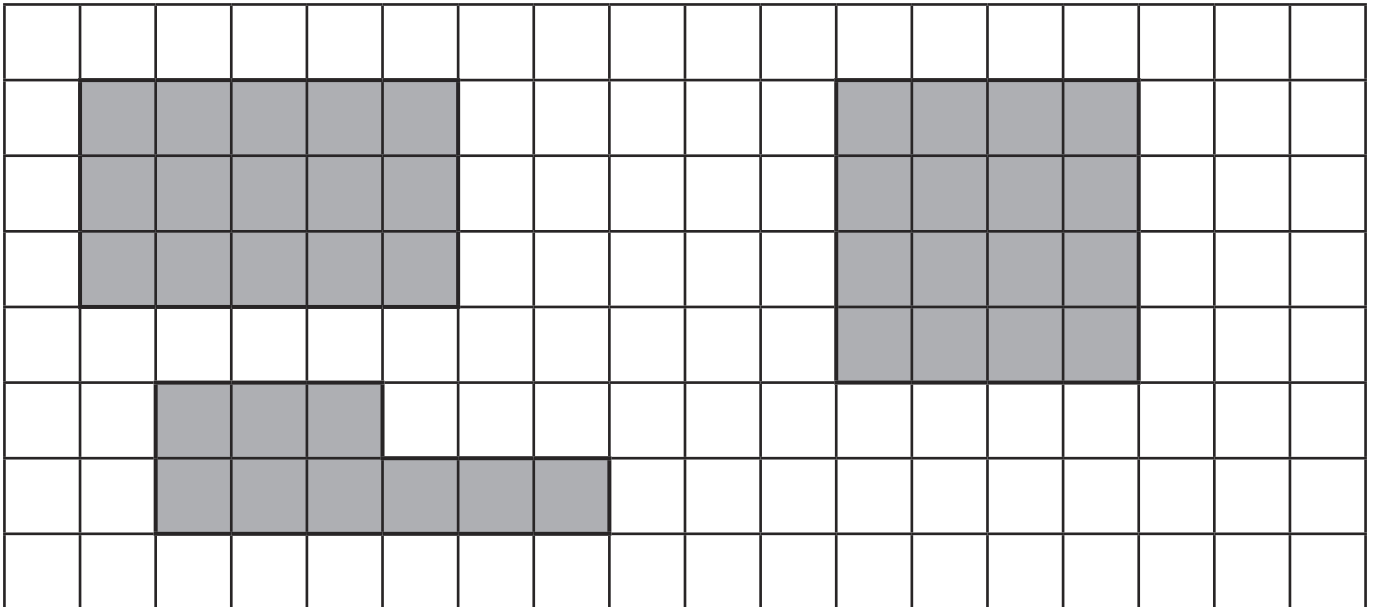
$$\text{Perimeter} = \text{_____ cm} + \text{_____ cm} + \text{_____ cm} + \text{_____ cm} = \text{_____ cm}$$

Calculating Perimeter on a Grid

Answers

- 1) a) 14cm
b) 22cm
c) 12cm
d) 22cm

2) Multiple answers possible, including these shapes:



3)

a

8cm

2cm

Perimeter = 8cm + 2cm + 8cm + 2cm = 20cm

b

3cm

6cm

Perimeter = 3cm + 6cm + 3cm + 6cm = 18cm

c

3cm

3cm

Perimeter = 3cm + 3cm + 3cm + 3cm = 12cm

d

6cm

1cm

Perimeter = 6cm + 1cm + 6cm + 1cm = 14cm

Calculating Perimeter on a Grid

To calculate the perimeters of shapes drawn on a grid.



1) Draw shapes which have the perimeters shown:



a) Perimeter = 18cm

b) Perimeter = 24cm

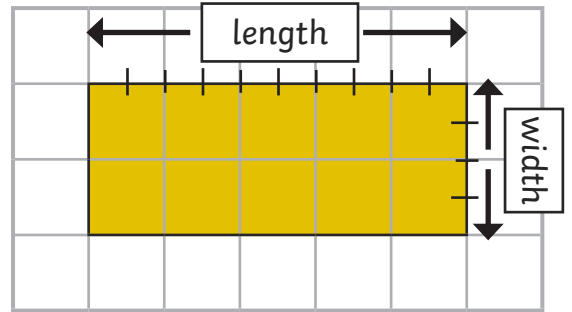
c) Perimeter = 22cm

d) Perimeter = 14cm

2. a) When working out the perimeter of rectangles, which of these statements are true?

$\text{length} + \text{length} + \text{length} + \text{length} = \text{perimeter}$	<input type="checkbox"/>
$\text{length} + \text{width} + \text{length} + \text{width} = \text{perimeter}$	<input type="checkbox"/>
$\text{width} + \text{length} + \text{width} + \text{length} = \text{perimeter}$	<input type="checkbox"/>
$\text{length} + \text{width} + \text{length} + \text{length} = \text{perimeter}$	<input type="checkbox"/>
$\text{width} + \text{width} + \text{length} + \text{length} = \text{perimeter}$	<input type="checkbox"/>

Tick the statements you agree with.

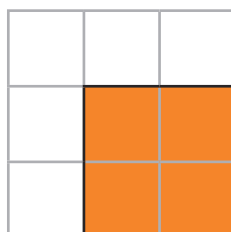


b) Use one of the statements to calculate the perimeters of these shapes. The first one has been completed.

$\text{length} + \text{width} + \text{length} + \text{width} = \text{perimeter}$
 $5\text{cm} + 3\text{cm} + 5\text{cm} + 3\text{cm} = 16\text{cm}$

3. a) Write your own statement to explain how to find the perimeter of a square.

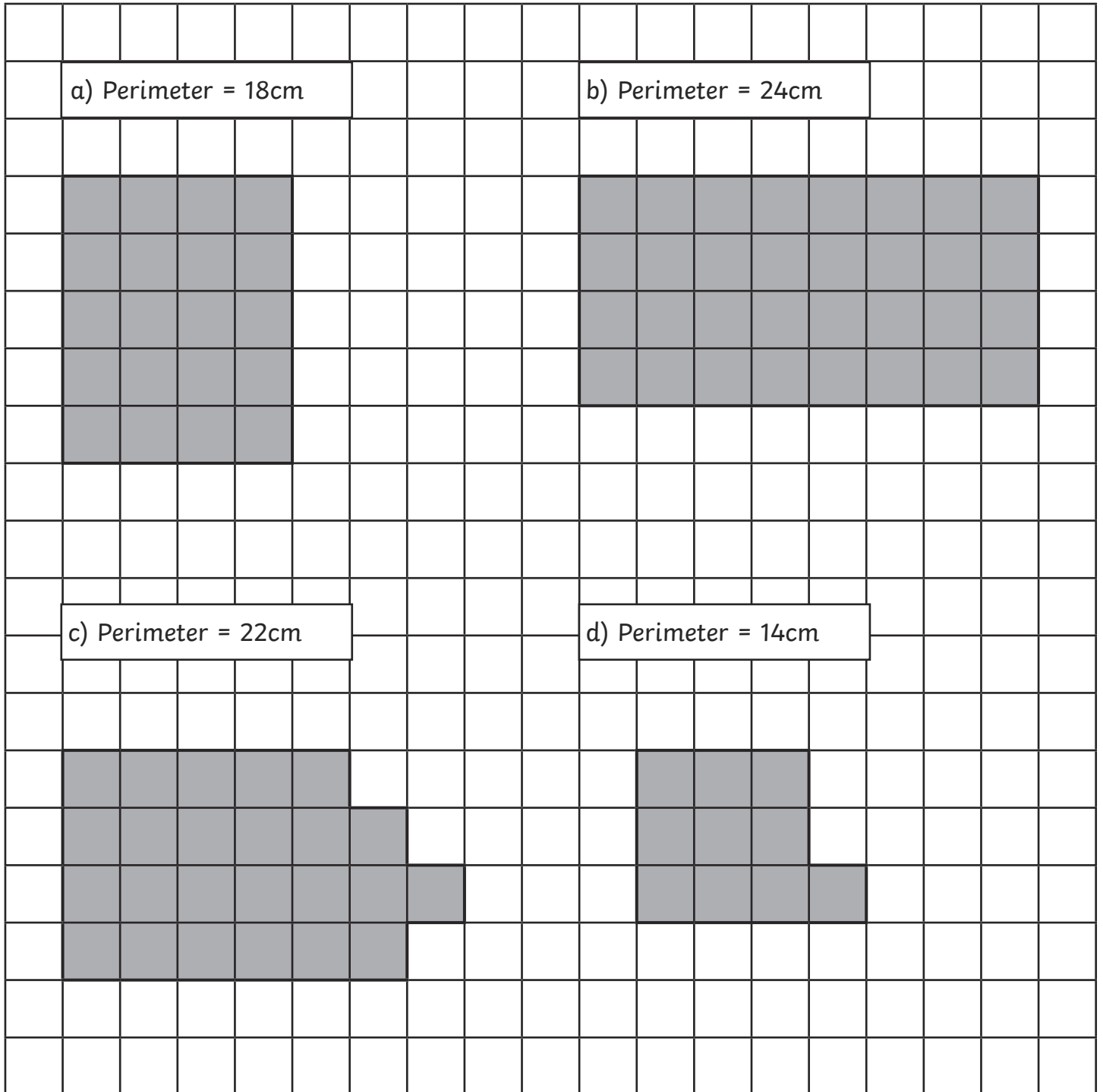
b) Use your statement to calculate the perimeter of this square.



Calculating Perimeter on a Grid

Answers

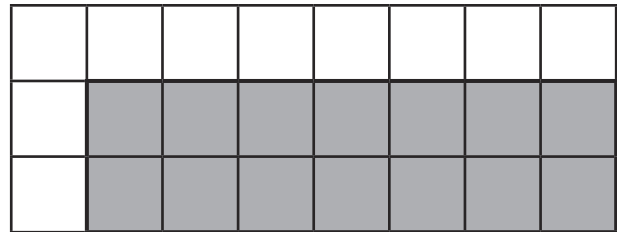
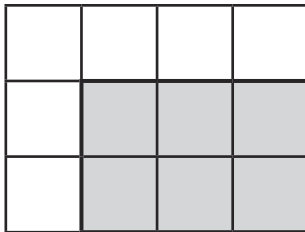
1) Variety of shapes which match the perimeters. Examples given



1) a) Variety of shapes which match the perimeters. Examples given

length + length + length + length = perimeter	
length + width + length + width = perimeter	✓
width + length + width + length = perimeter	✓
length + width + length + length = perimeter	
width + width + length + length = perimeter	✓

b) One of the correct statements used to calculate the perimeter.

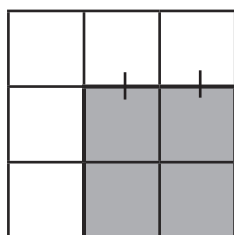


length + width + length + width
 $3\text{cm} + 2\text{cm} + 3\text{cm} + 2\text{cm} = 10\text{cm}$
 or
 width + length + width + length
 $2\text{cm} + 3\text{cm} + 2\text{cm} + 3\text{cm} = 10\text{cm}$
 or
 width + width + length + length
 $2\text{cm} + 2\text{cm} + 3\text{cm} + 3\text{cm} = 10\text{cm}$

length + width + length + width
 $7\text{cm} + 2\text{cm} + 7\text{cm} + 2\text{cm} = 18\text{cm}$
 or
 width + length + width + length
 $2\text{cm} + 7\text{cm} + 2\text{cm} + 7\text{cm} = 18\text{cm}$
 or
 width + width + length + length
 $2\text{cm} + 2\text{cm} + 7\text{cm} + 7\text{cm} = 18\text{cm}$

3) a) length + length + length + length = perimeter or width + width + width + width = perimeter

b)



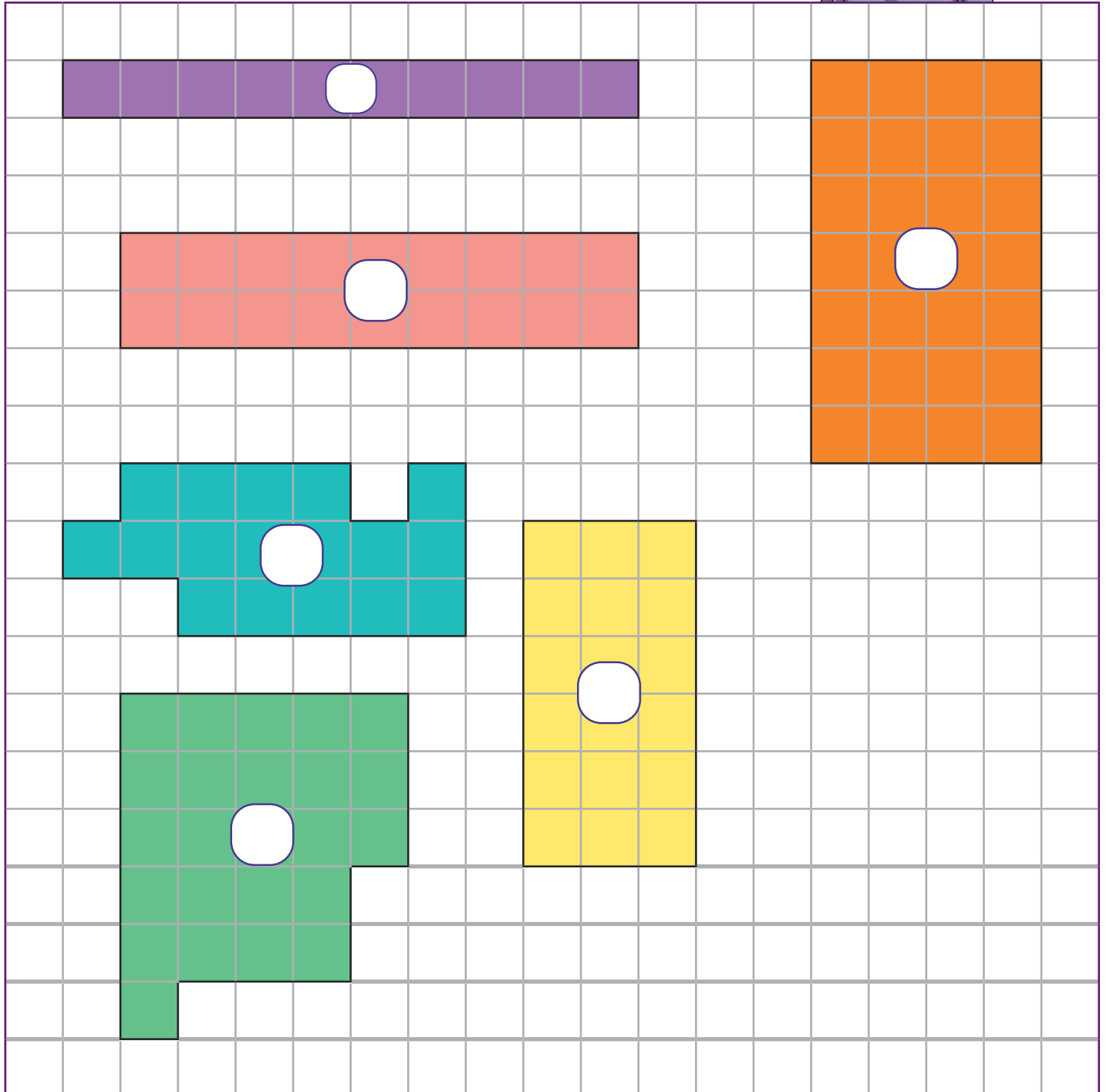
length + length + length + length
 $2\text{cm} + 2\text{cm} + 2\text{cm} + 2\text{cm} = 8\text{cm}$
 or
 width + width + width + width
 $2\text{cm} + 2\text{cm} + 2\text{cm} + 2\text{cm} = 8\text{cm}$

Calculating Perimeter on a Grid

To calculate the perimeters of shapes drawn on a grid.



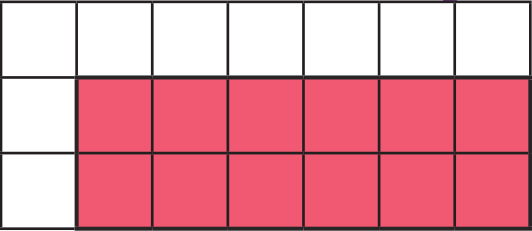
- 1) a) Which shape is the odd one out? Place a cross inside the shape you choose and put ticks in all the rest.
- b) Draw a different shape which has the same perimeter as the shapes with ticks.



2) a) Explain how you can find the perimeter of a rectangle on a grid without having to count all the sides.

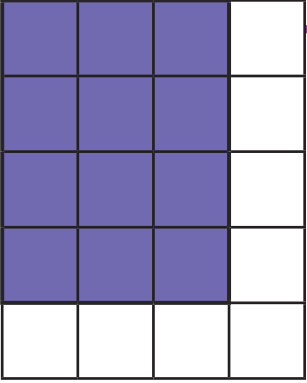
b) Explain how you can find the perimeter of a square on a grid without having to count all the sides.

3. a) Use the method you described to find the perimeter of these shapes. For each shape, write a calculation to show how you calculated the perimeter.



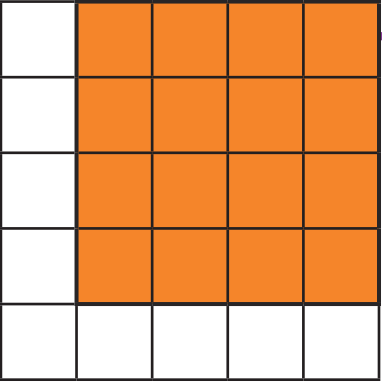
Calculation:

Perimeter:



Calculation:

Perimeter:



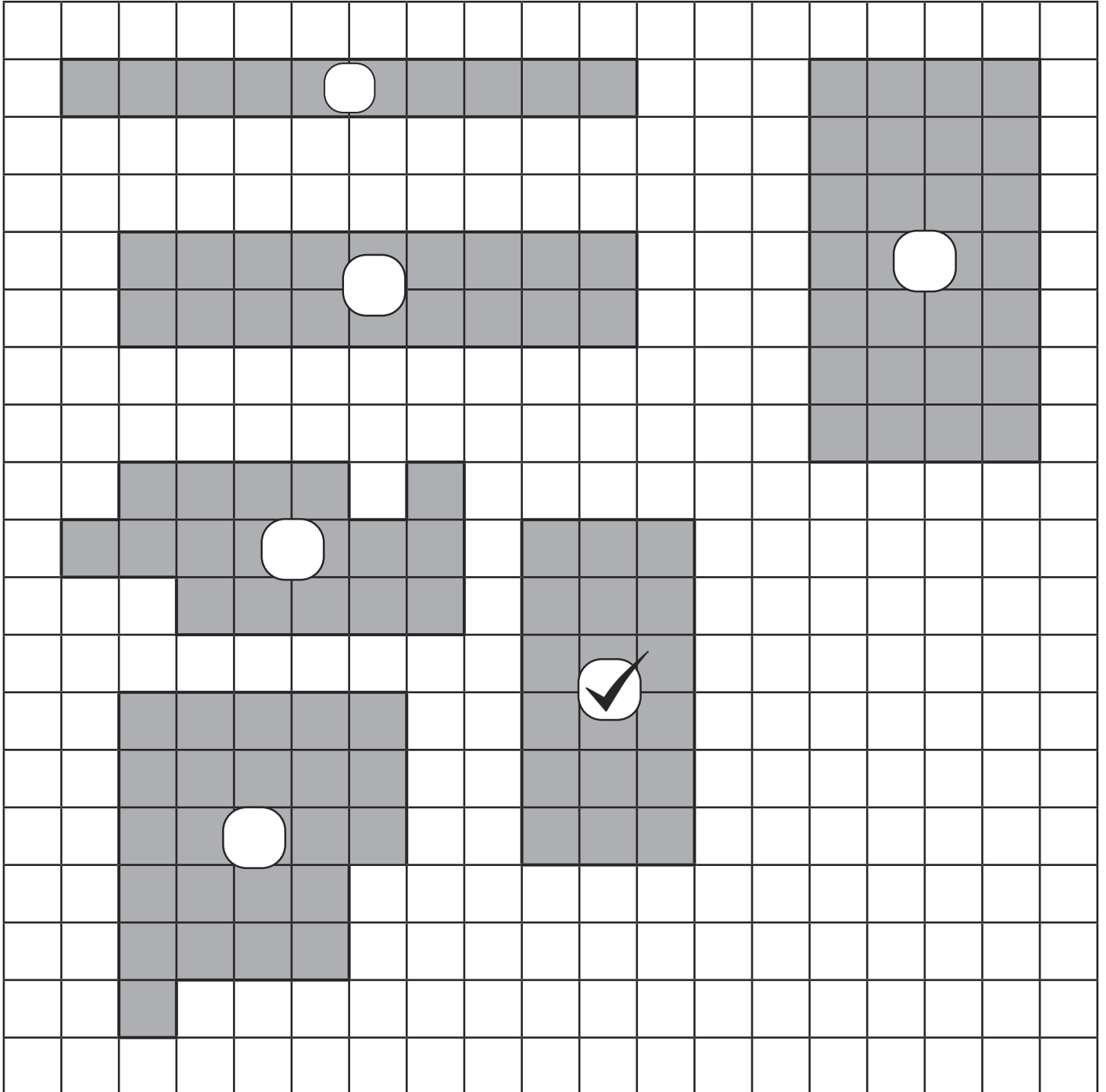
Calculation:

Perimeter:

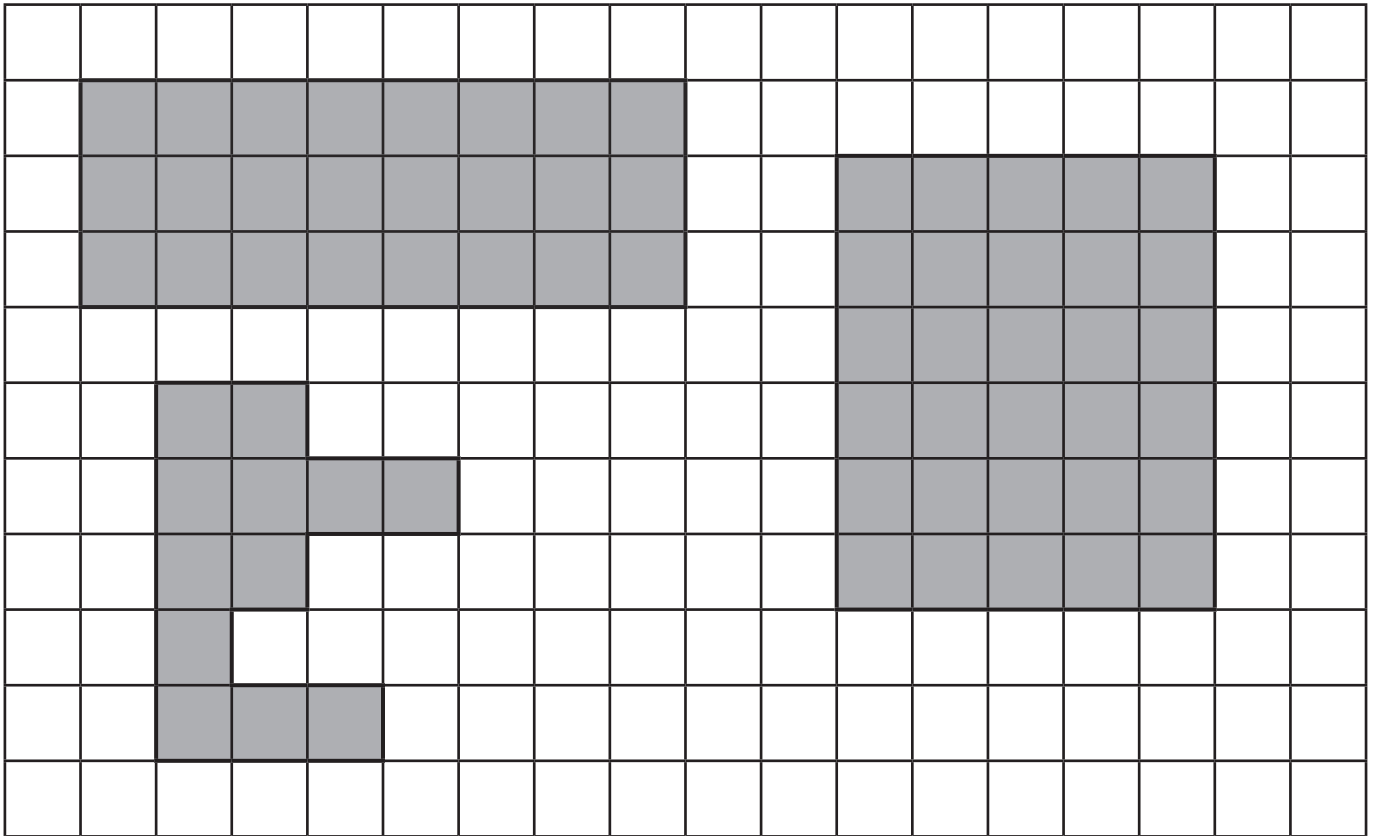
Calculating Perimeter on a Grid

Answers

1. a)



b) Various shapes possible, including:



2) a) Explanation shows that if you know the measurement of the length and width of the rectangle, then you do not need to count all sides.

Example: Calculate the length and width of the rectangle. Then add together two times the length and two times the width.

b) Explanation shows that if you know the measurement of the length of one of the sides, then you do not need to count all sides.

Example: Calculate the length of one of the sides of the square. Then add together four times the length of this side.

3) Calculations link to the method described in question 2.

a) 16cm

b) 14cm

c) 16cm