Reasoning and Problem Solving
Step 4: Perimeter of Rectilinear Shapes

National Curriculum Objectives:

Mathematics Year 4: (4M7a) Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Explain which shape is the odd one out by calculating the perimeter of each shape. Includes single-digit numbers. Measurements are given in cm.
Expected Explain which shape is the odd one out by calculating the perimeter of each shape. Includes single-digit numbers and missing measurements. Measurements are given in cm or mm (no conversion needed).
Greater Depth Explain which shape is the odd one out by calculating the perimeter of each shape. Includes some double-digit numbers and missing measurements. Measurements are give in cm and mm (conversion needed).

Questions 2, 5 and 8 (Problem Solving)
Developing Using the perimeter, find the missing measurement for up to two sides of the rectilinear shape. Includes single-digit numbers. Measurements are given in cm.
Expected Using the perimeter, find the measurements for each side of the rectilinear shape with up to three measurements given. Includes single-digit numbers. Measurements are given in cm and mm (no conversion needed).
Greater Depth Using the perimeter, find the measurements for each side of the rectilinear shape with up to three measurements given. Includes some double-digit numbers. Measurements are given in cm and mm (conversion needed).

Questions 3, 6 and 9 (Reasoning)
Developing Explain if a statement about the perimeter of a shape is correct. No missing measurements. Measurements are given in cm.
Expected Explain whether a statement is correct. Using a rectilinear shape with up to two missing measurements. Includes single-digit numbers. Measurements are given in cm or mm (no conversion needed).
Greater Depth Explain if a statement about the perimeter of a shape with three or more missing measurements is correct. Includes some double-digit numbers. Measurements are given in cm and mm (conversion needed).

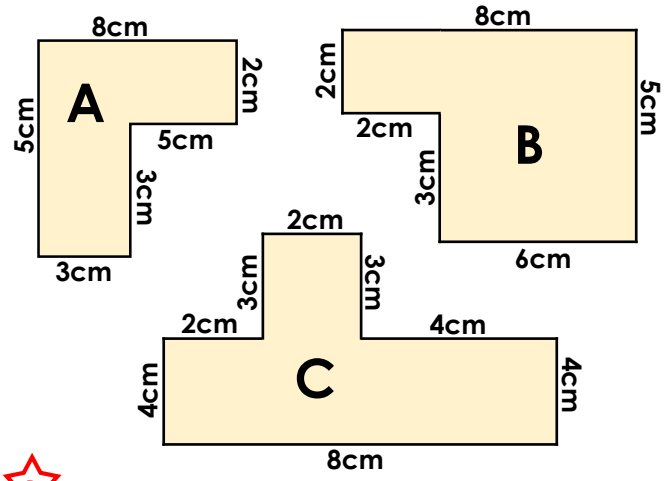
More Year 4 Length and Perimeter resources.

Did you like this resource? Don't forget to review it on our website.

Perimeter of Rectilinear Shapes

Perimeter of Rectilinear Shapes

1a. Which shape is the odd one out? Explain how you know.

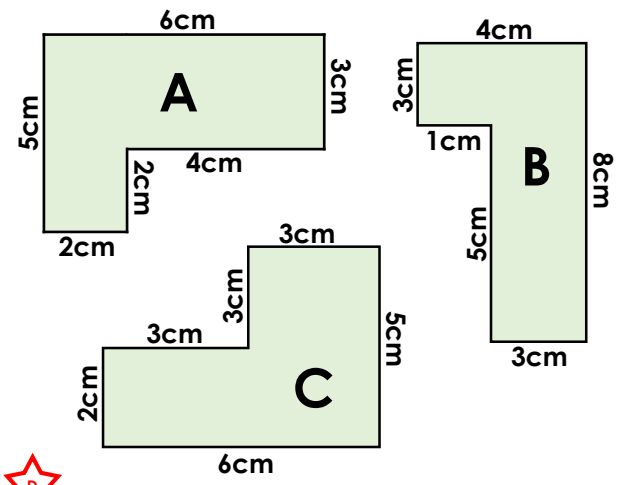


D

Not to scale

R

1b. Which shape is the odd one out? Explain how you know.



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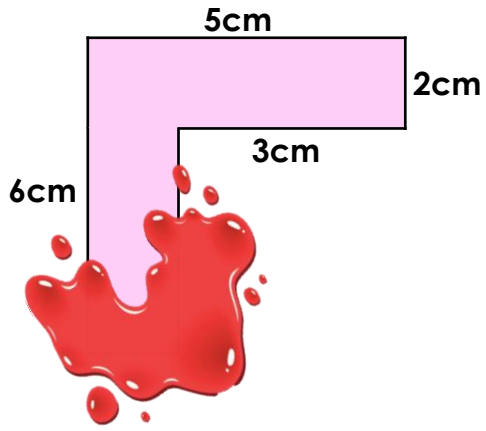
2a. The six sided shape below has a perimeter of 22cm. What are the possible missing measurements?



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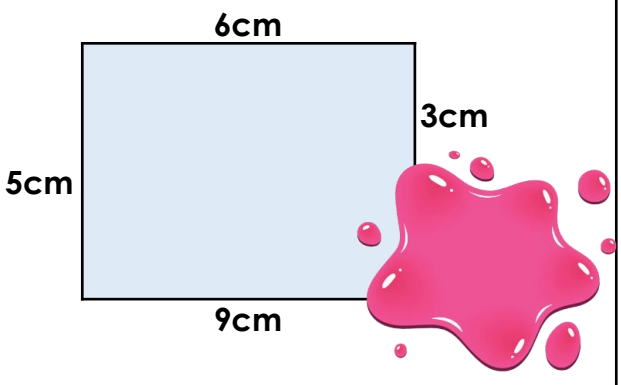
PS

2b. The six sided shape below has a perimeter of 28cm. What are the possible missing measurements?



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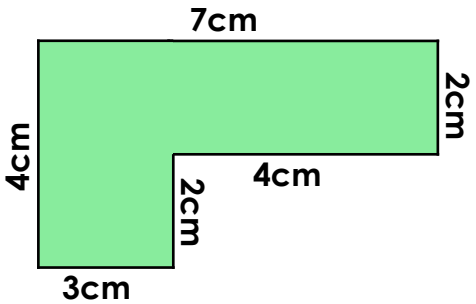
PS

3a. Ben thinks that this shape has a perimeter of 32cm.



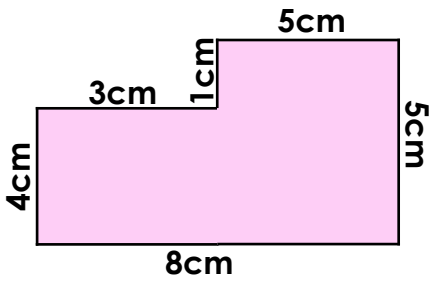
Do you agree? Convince me.

D

Not to scale

R

3b. Carly thinks that this shape has a perimeter of 30cm.



Do you agree? Convince me.

D

Not to scale

R

Perimeter of Rectilinear Shapes

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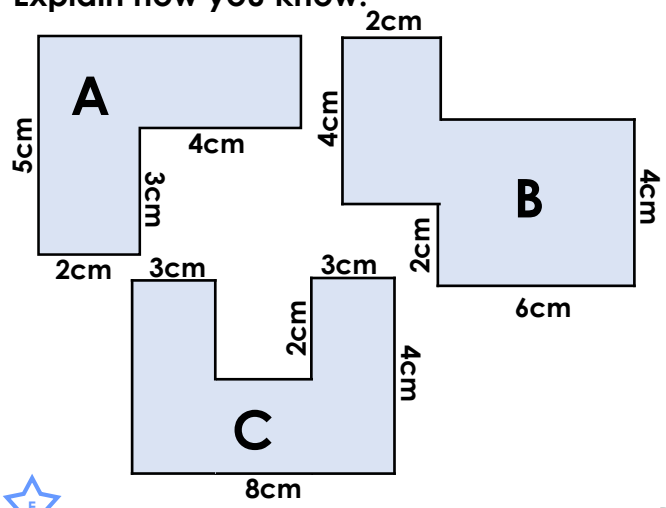
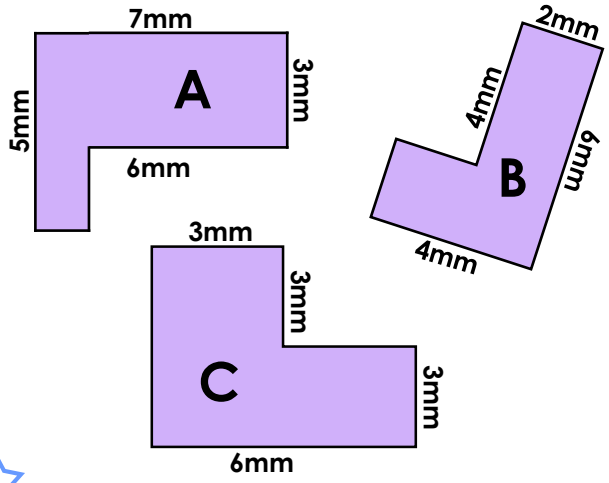
4a. Which shape is the odd one out? Explain how you know.



Not to scale

R

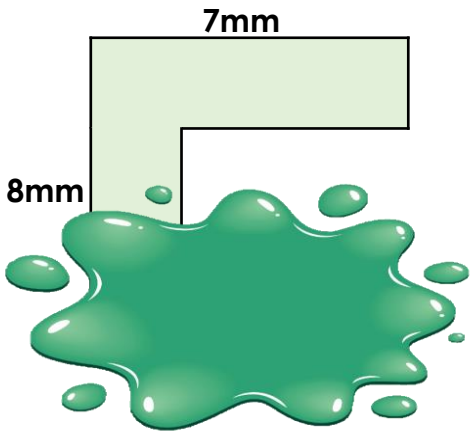
4b. Which shape is the odd one out? Explain how you know.



Not to scale

R

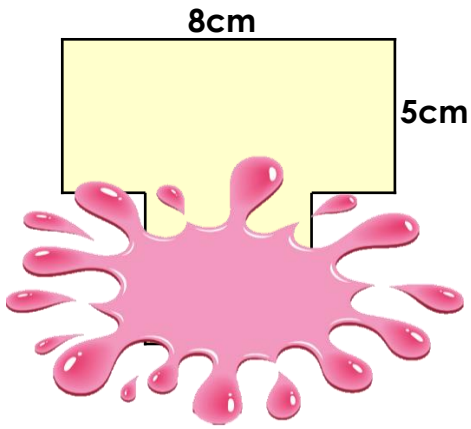
5a. The eight sided shape below has a perimeter of 38mm. What are the possible missing measurements?



Not to scale

PS

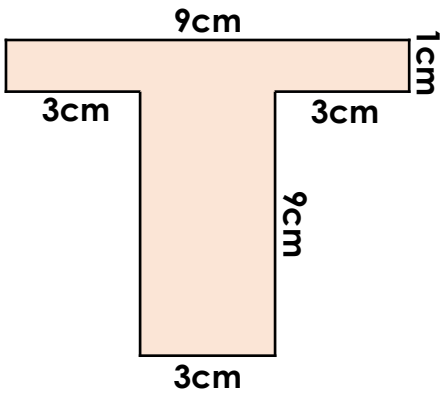
5b. The eight sided shape below has a perimeter of 34cm. What are the possible missing measurements?



Not to scale

PS

6a. Harry thinks that this shape has a perimeter of 40cm.

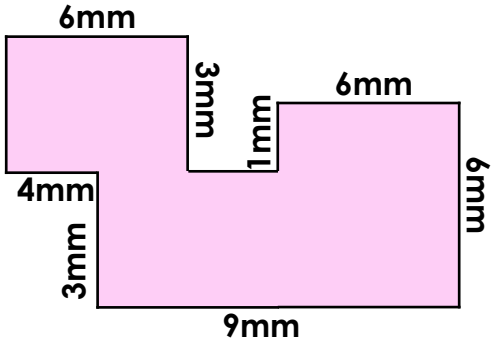


Do you agree? Convince me.

Not to scale

R

6b. Carly thinks that this shape has a perimeter of 44mm.



Do you agree? Convince me.

Not to scale

R

Perimeter of Rectilinear Shapes

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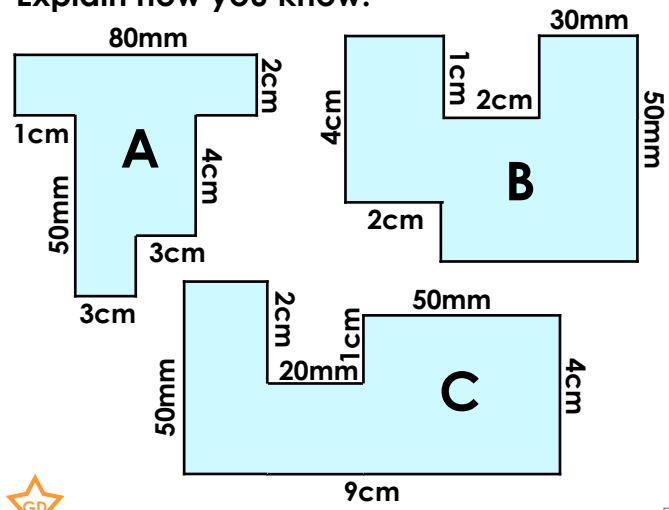
7a. Which shape is the odd one out? Explain how you know.



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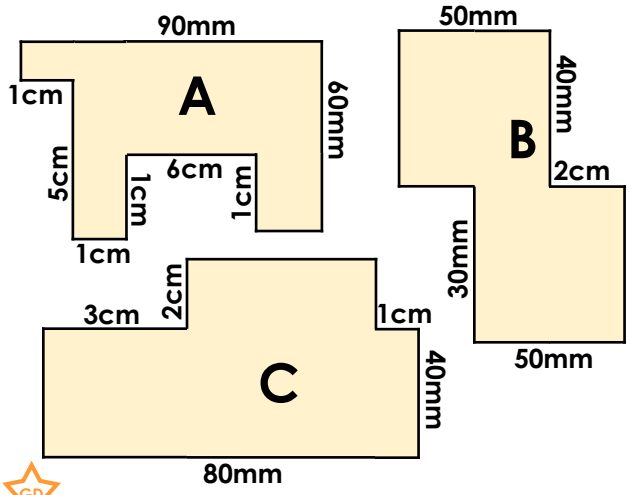
R

7b. Which shape is the odd one out? Explain how you know.



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Not to scale

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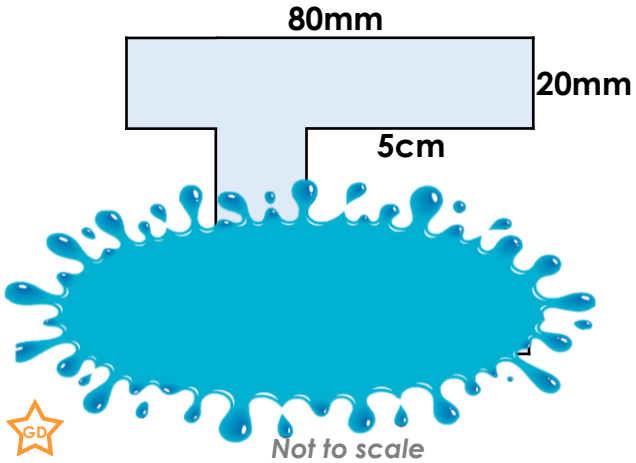
8a. The twelve sided shape below has a perimeter of 44cm. What are the possible missing measurements?



GD

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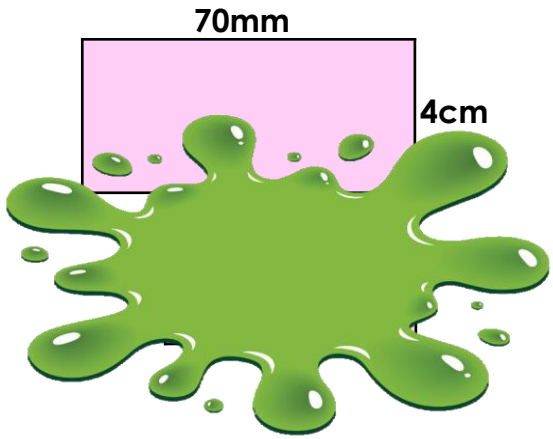
PS

8b. The ten sided shape below has a perimeter of 32cm. What are the possible missing measurements?

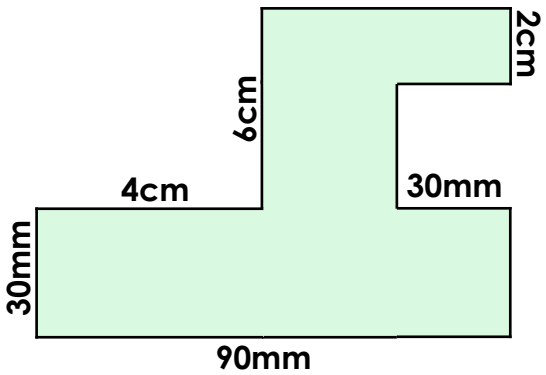


GD

Not to scale

PS

9a. Imran thinks that this shape has a perimeter of 40cm.



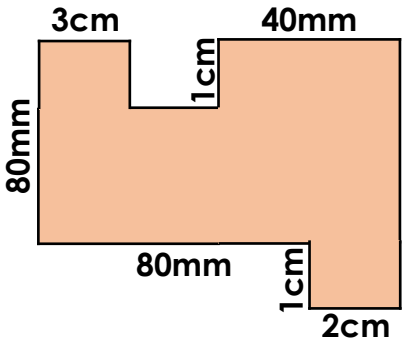
Do you agree? Convince me.

GD

Not to scale

R

9b. Nina thinks that this shape has a perimeter of 42cm.



Do you agree? Convince me.

GD

Not to scale

R

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Perimeter of Rectilinear Shapes

Developing

1a. C. The perimeter of C = 30cm, but both A and B have a perimeter of 26cm.
2a. 4cm and 2cm.
3a. No; when added together all the sides total 22cm.

Expected

4a. A. The perimeter of A = 22cm, but both B and C have a perimeter of 28cm.
5a. Various answers, for example: 4mm, 4mm, 4mm, 2mm, 2mm and 7mm.
6a. No; the missing measurements are 9cm and 1cm, so the perimeter is 38cm.

Greater Depth

7a. B. The perimeter of B = 26cm, but both A and C have a perimeter of 30cm.
8a. Various answers, for example: 3cm, 5cm, 2cm, 8cm, 2cm, 2cm, 3cm, 2cm, 2cm.
9a. No; the missing measurements are 5cm, 3cm, 4cm and 3cm, so the perimeter is 42cm.

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Developing

1b. B. The perimeter of B = 24cm, but both A and C have a perimeter of 22cm.
2b. 3cm and 2cm.
3b. No; when added together all the sides total 26cm.

Expected

4b. B. The perimeter of B = 20mm, but both A and C have a perimeter of 24mm.
5b. Various answers, for example: 5cm, 1cm, 1cm, 6cm, 4cm and 4cm.
6b. No; the missing measurements are 3mm and 1mm so the perimeter is 42mm.

Greater Depth

7b. A. The perimeter of A = 32cm, but both B and C have a perimeter of 28cm.
8b. Various answers, for example: 2cm, 2cm, 2cm, 2cm, 3cm, 4cm, 2cm, 4cm.
9b. No; the missing measurements are 3cm and 9cm, so the perimeter is 40cm.