

# Varied Fluency

## Step 2: Area and Perimeter

### National Curriculum Objectives:

Mathematics Year 6: (6M7a) [Recognise that shapes with the same areas can have different perimeters and vice versa](#)

Mathematics Year 6: (6M7c) [Recognise when it is possible to use formulae for the area of shapes](#)

### Differentiation:

**Developing** Questions to support calculating area and perimeter of rectangles and rectilinear shapes. Whole numbers only, using known multiplication facts within 12 x 12.

**Expected** Questions to support calculating area and perimeter of rectangles and rectilinear shapes. Includes 2-digit by 1-digit whole numbers and some conversion between units of measure.

**Greater Depth** Questions to support calculating area and perimeter of rectangles and rectilinear shapes. Includes some conversion between units of measure and decimal numbers.

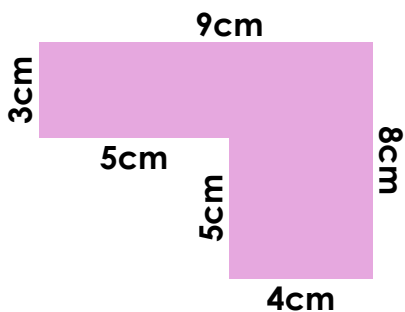
More [Year 6 Perimeter, Area and Volume](#) resources.

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## Area and Perimeter

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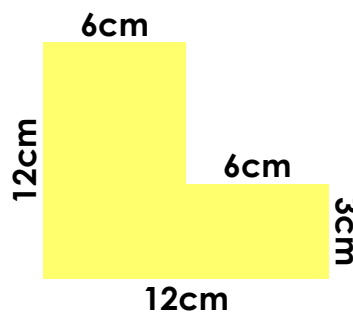
1a. True or false? The area of this shape is  $67\text{cm}^2$ .



*Not to scale*

VF

1b. True or false? The perimeter of this shape is  $39\text{cm}$ .



*Not to scale*

VF

2a. Solve the word problem.

A classroom measures  $12\text{ft}$  by  $4\text{ft}$ . What is the area and perimeter of the classroom?

2b. Solve the word problem.

A bedroom measures  $12\text{m}$  by  $8\text{m}$ . What is the area and perimeter of the bedroom?

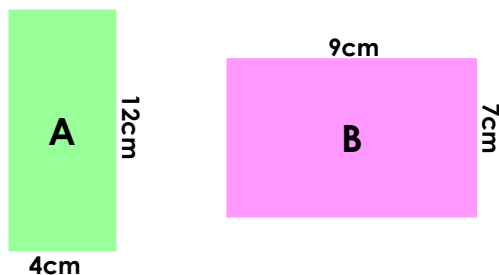


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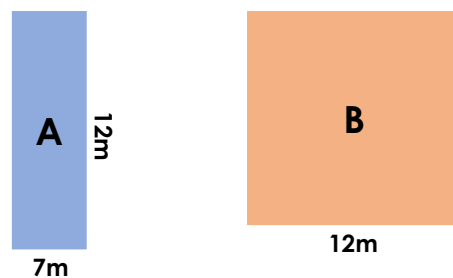
3a. Calculate the area and the perimeter.



*Not to scale*

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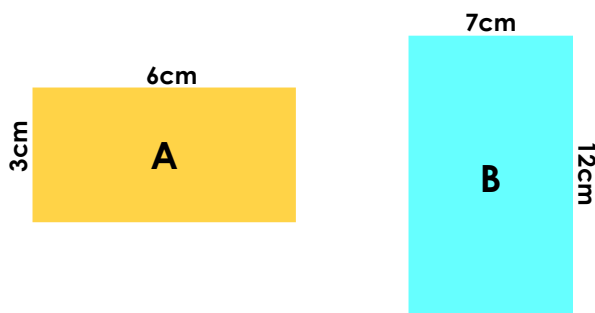
3b. Calculate the area and the perimeter.



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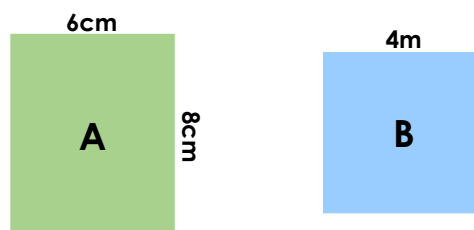
4a. Which shape has an area and a perimeter that equal the same number?



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4b. Which shape has an area and a perimeter that equal the same number?

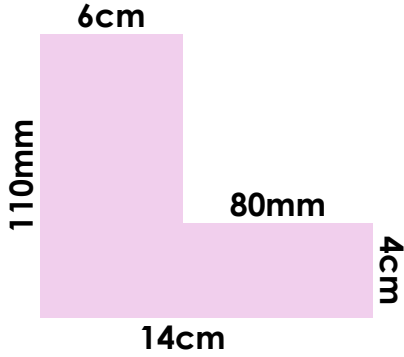


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## Area and Perimeter

5a. True or false? The area of this shape is  $108\text{mm}^2$ .

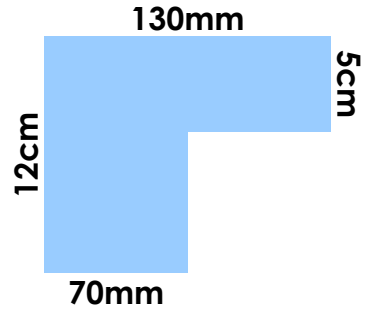


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## Area and Perimeter

5b. True or false? The perimeter of this shape is 37cm.



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6a. Solve the word problem.

A garden measures 15ft by 4ft. What is the area and perimeter of the garden?



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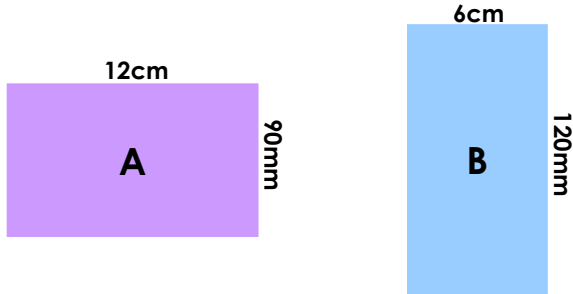
6b. Solve the word problem.

A shop floor measures 23m by 9m. What is the area and perimeter of the shop?



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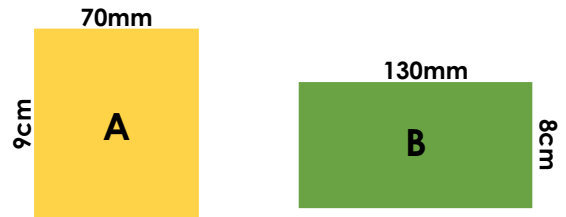
7a. Calculate the area and the perimeter.



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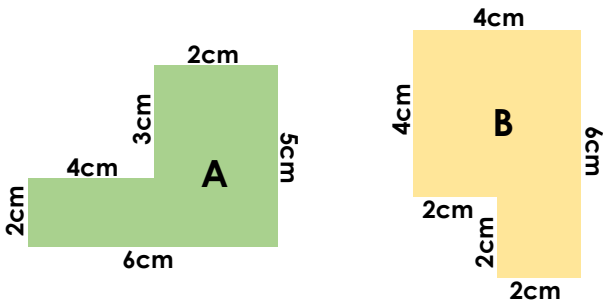
7b. Calculate the area and the perimeter.



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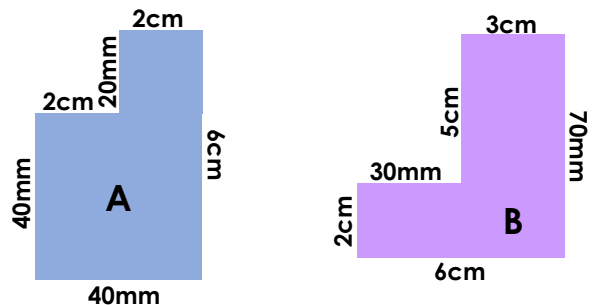
8a. Which shape has an area and a perimeter that equal the same number?



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8b. Which shape has an area and a perimeter that equal the same number?

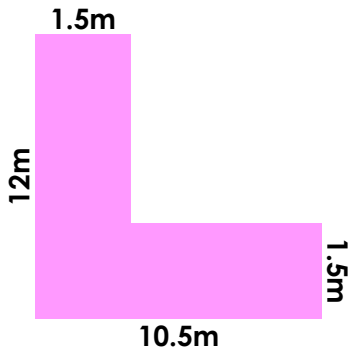


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## Area and Perimeter

9a. True or false? The area of this shape is  $18\text{m}^2$ .

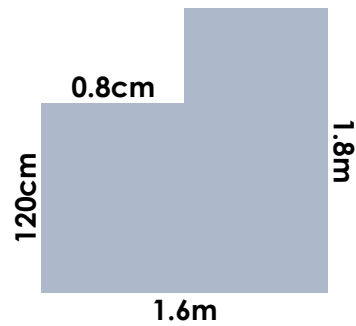


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## Area and Perimeter

9b. True or false? The perimeter of this shape is  $124.2\text{m}$ .



Not to scale

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10a. Solve the word problem.

A garden measures  $18\text{m}$  by  $350\text{cm}$ . What is the area and perimeter of the garden?



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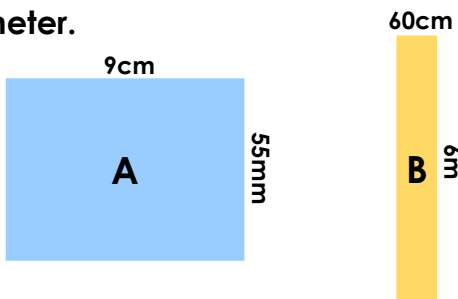
10b. Solve the word problem.

A field measures  $19\text{m}$  by  $550\text{cm}$ . What is the area and perimeter of the field?



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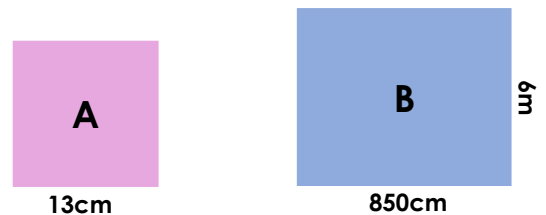
11a. Calculate the area and the perimeter.



Not to scale

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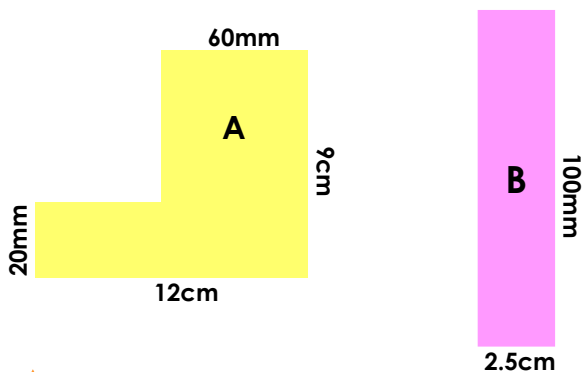
11b. Calculate the area and the perimeter.



Not to scale

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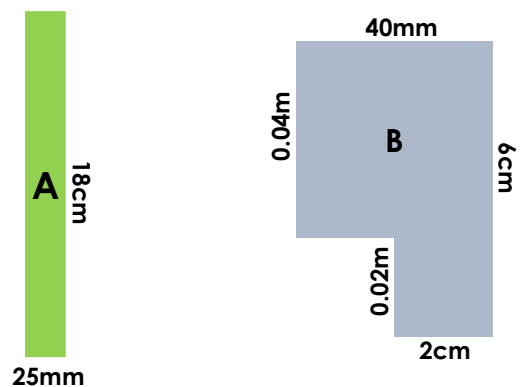
12a. Which shape has an area and a perimeter that equal the same number?



Not to scale

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12b. Which shape has an area and a perimeter that equal the same number?



Not to scale

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## Varied Fluency Area and Perimeter

### Developing

- 1a. False, the correct answer is  $47\text{cm}^2$ .  
2a. Area =  $12 \times 4 = 48\text{ft}^2$ , Perimeter =  $32\text{ft}$ .  
3a. A. Area =  $48\text{cm}^2$ , Perimeter =  $32\text{cm}$ .  
B. Area =  $63\text{cm}^2$ , Perimeter =  $32\text{cm}$ .  
4a. A

### Expected

- 5a. False, the correct answer is  $98\text{cm}^2$ .  
6a. Area =  $15 \times 4 = 60\text{ft}^2$ , Perimeter =  $38\text{ft}$ .  
7a. A. Area =  $108\text{cm}^2$ , Perimeter =  $42\text{cm}$ .  
B. Area =  $72\text{cm}^2$ , Perimeter =  $36\text{cm}$ .  
8a. B

### Greater Depth

- 9a. False, the correct answer is  $31.5\text{cm}^2$ .  
10a. Area =  $18 \times 3.5 = 63\text{m}^2$ , Perimeter =  $43\text{m}$ .  
11a. A. Area =  $49.5\text{cm}^2$ , Perimeter =  $29\text{cm}$ .  
B. Area =  $3.6\text{m}^2$ , Perimeter =  $13.2\text{m}$ .  
12a. B

## Varied Fluency Area and Perimeter

### Developing

- 1b. False, the correct answer is  $48\text{cm}$ .  
2b. Area =  $12 \times 8 = 96\text{m}^2$ , Perimeter =  $40\text{m}$ .  
3b. A. Area =  $84\text{m}^2$ , Perimeter =  $38\text{m}$ .  
B. Area =  $144\text{m}^2$ , Perimeter =  $48\text{m}$ .  
4b. B

### Expected

- 5b. False, the correct answer is  $50\text{cm}$ .  
6b. Area =  $23 \times 9 = 207\text{m}^2$ , Perimeter =  $64\text{m}$ .  
7b. A. Area =  $63\text{cm}^2$ , Perimeter =  $32\text{cm}$ .  
B. Area =  $104\text{cm}^2$ , Perimeter =  $42\text{cm}$ .  
8b. A

### Greater Depth

- 9b. False, the correct answer is  $6.8\text{m}$ .  
10b. Area =  $19 \times 5.5 = 104.5\text{m}^2$ , Perimeter =  $49\text{m}$ .  
11b. A. Area =  $169\text{cm}^2$ , Perimeter =  $52\text{cm}$ .  
B. Area =  $51\text{m}^2$ , Perimeter =  $29\text{m}$ .  
12b. B