

Year 3 and Year 4 Measures and Data, Unit 1 (34924)

Additional teacher instructions for practice sheets

These notes indicate which practice sheets are most appropriate for which groups.

Day 1 Y3 Rectangle areas Sheet 1

Working towards ARE / Working at ARE / Greater Depth

Working towards ARE find the area of each shape.

Working at ARE / Greater Depth predict the order of shape area (smallest to largest) before finding the areas.

Day 1 Y4 Rectilinear areas Sheet 2

Working towards ARE / Working at ARE / Greater Depth

Working towards ARE find the area of each shape.

Working at ARE / Greater Depth predict the order of shape area (smallest to largest) before finding the areas.

Day 2 Y3 Calculating the perimeter of regular shapes Sheet 1

Working towards ARE / Working at ARE / Greater Depth

Working towards ARE complete every other shape (green) then see if they can complete the others (orange).

Working at ARE complete the table.

Greater Depth complete the table and BOTH Challenge questions.

Day 2 Y4 Perimeter of rectangles Sheet 2

Working towards ARE

Day 2 Y4 Perimeter of rectangles Sheet 3

Working at ARE / Greater Depth

Day 3 Y3 Calculating the perimeter of rectangles by doubling Sheet 1

Working towards ARE / Working at ARE / Greater Depth

Day 3 Y4 Area and perimeter Sheet 2

Working towards ARE

Day 3 Y4 Area and perimeter Sheet 3

Working at ARE

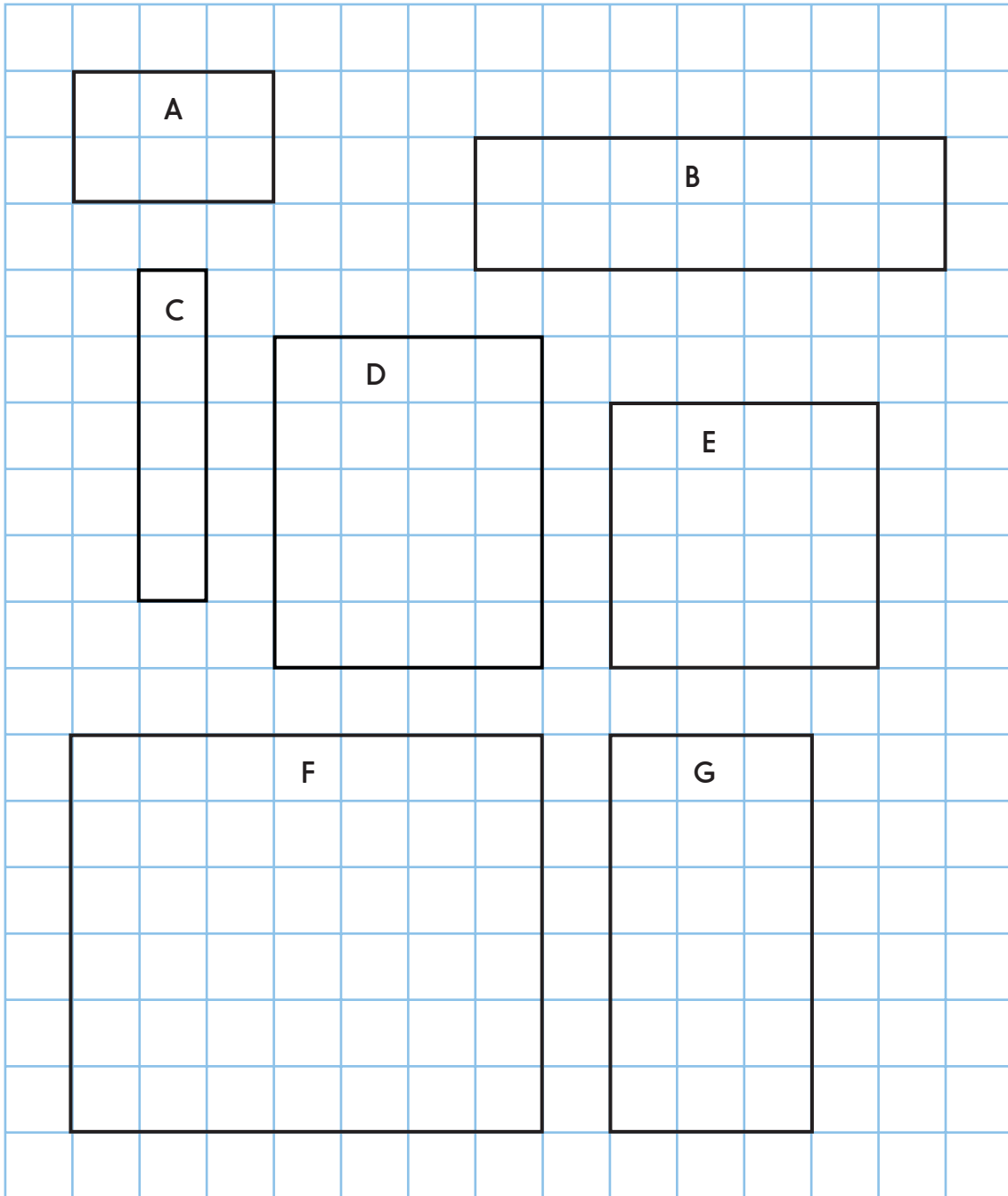
Day 3 Y4 Area and perimeter Sheet 4

Greater Depth

Rectangle areas

Sheet 1

Which of these rectangles has the largest area?



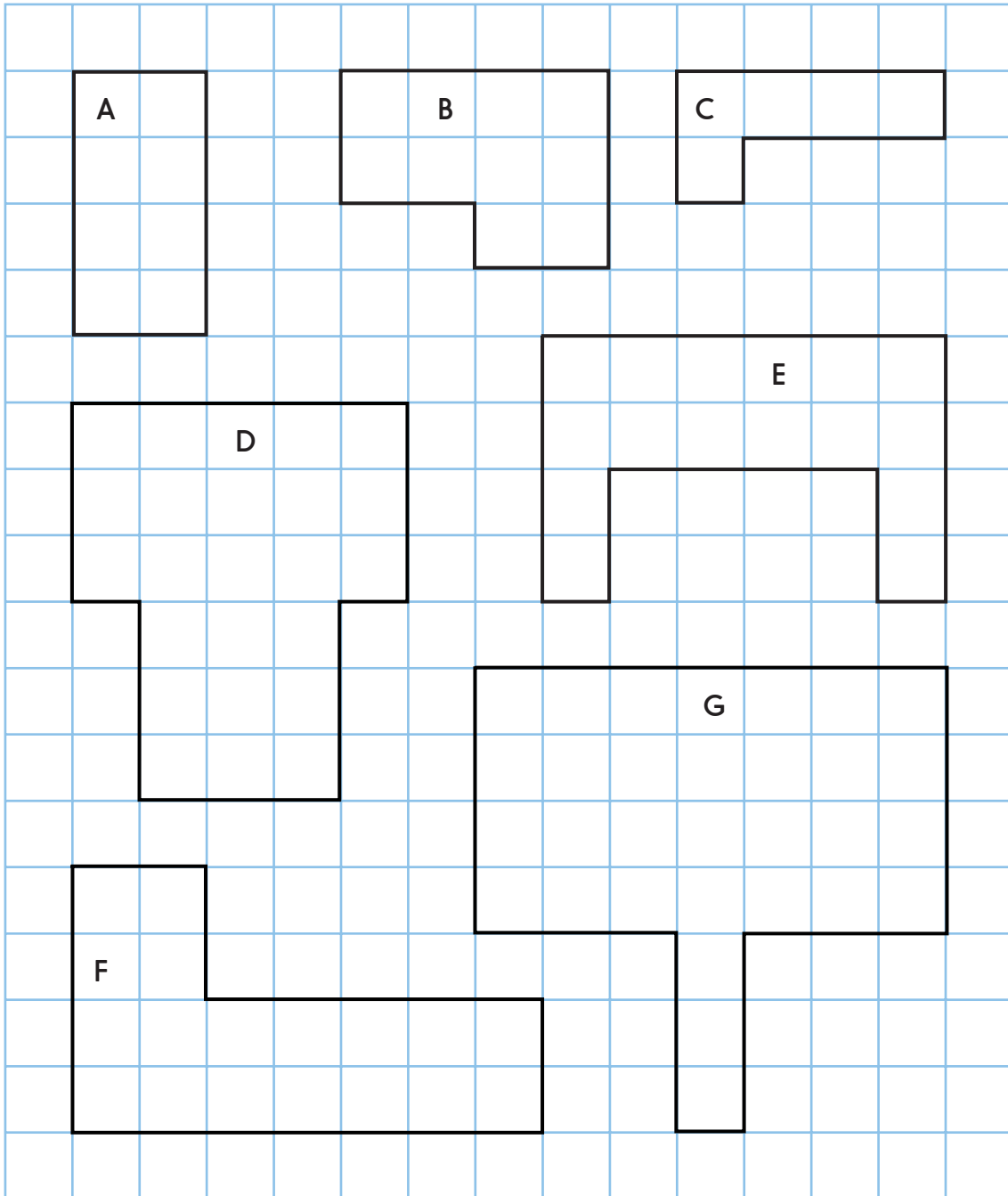
Challenge

Can you draw any other rectangles with the same area as shape F?

Rectilinear areas

Sheet 2

Which of these shapes has the largest area?



Calculating the perimeter of regular shapes

Sheet 1

Calculate the perimeters of these regular shapes from the length of one side. Complete the table.

Regular Shape	Length of one side	Number of sides	Perimeter
Equilateral triangle	15cm		
Octagon	5cm		
Pentagon	12cm		
Decagon	7cm		
Square	16cm		
Heptagon	3cm		
Hexagon	$1\frac{1}{2}$ cm		
Nonagon	4cm		

Challenge

What would the lengths of the sides of the following regular shapes be if the perimeter is 30cm:

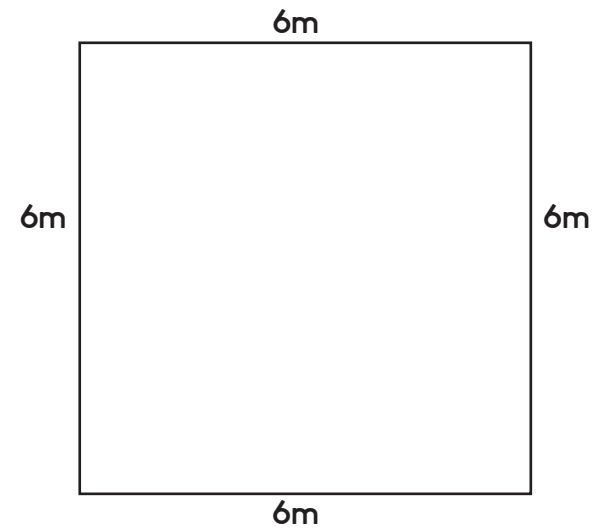
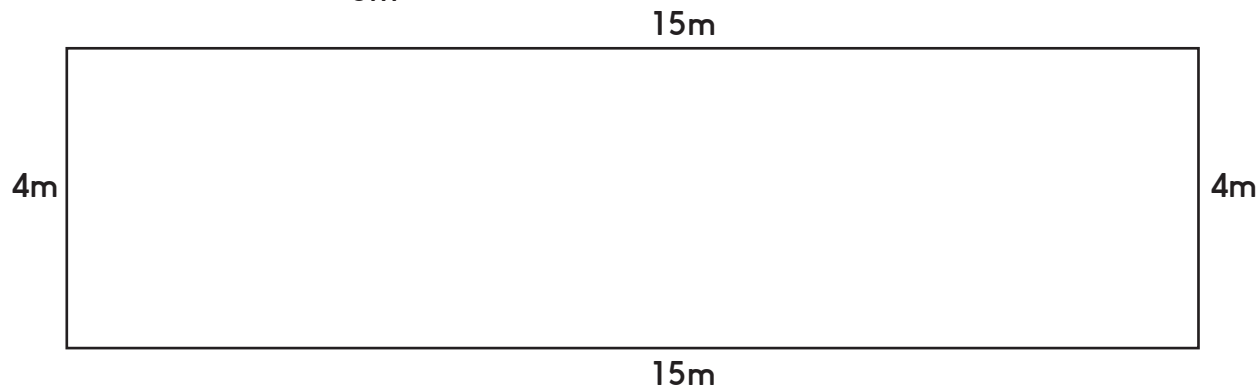
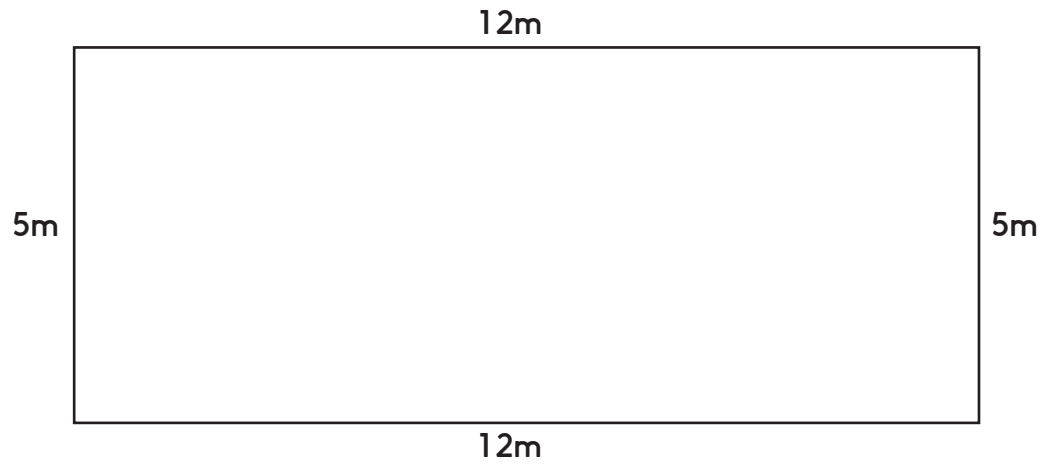
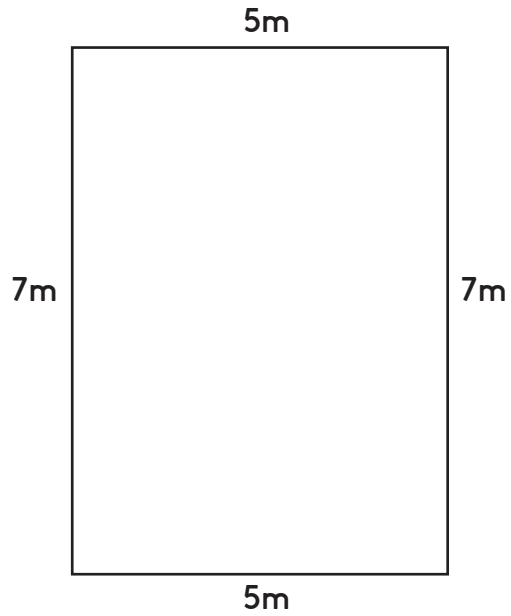
- a. equilateral triangle
- b. square
- c. pentagon
- d. hexagon

Can you suggest 5 different possible side lengths for an irregular pentagon with a perimeter of 40cm?

Perimeter of rectangles

Sheet 2

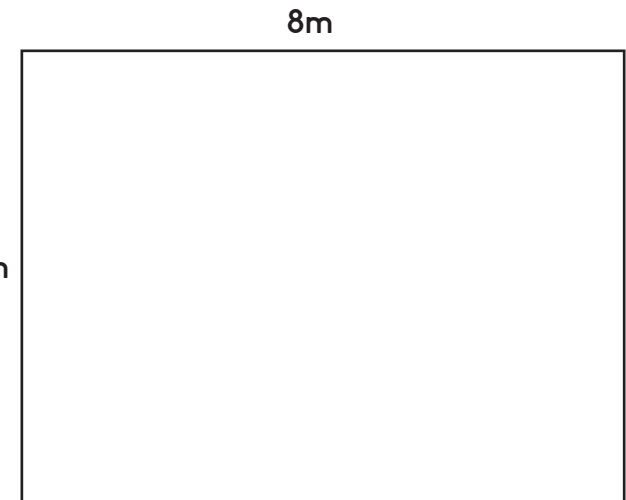
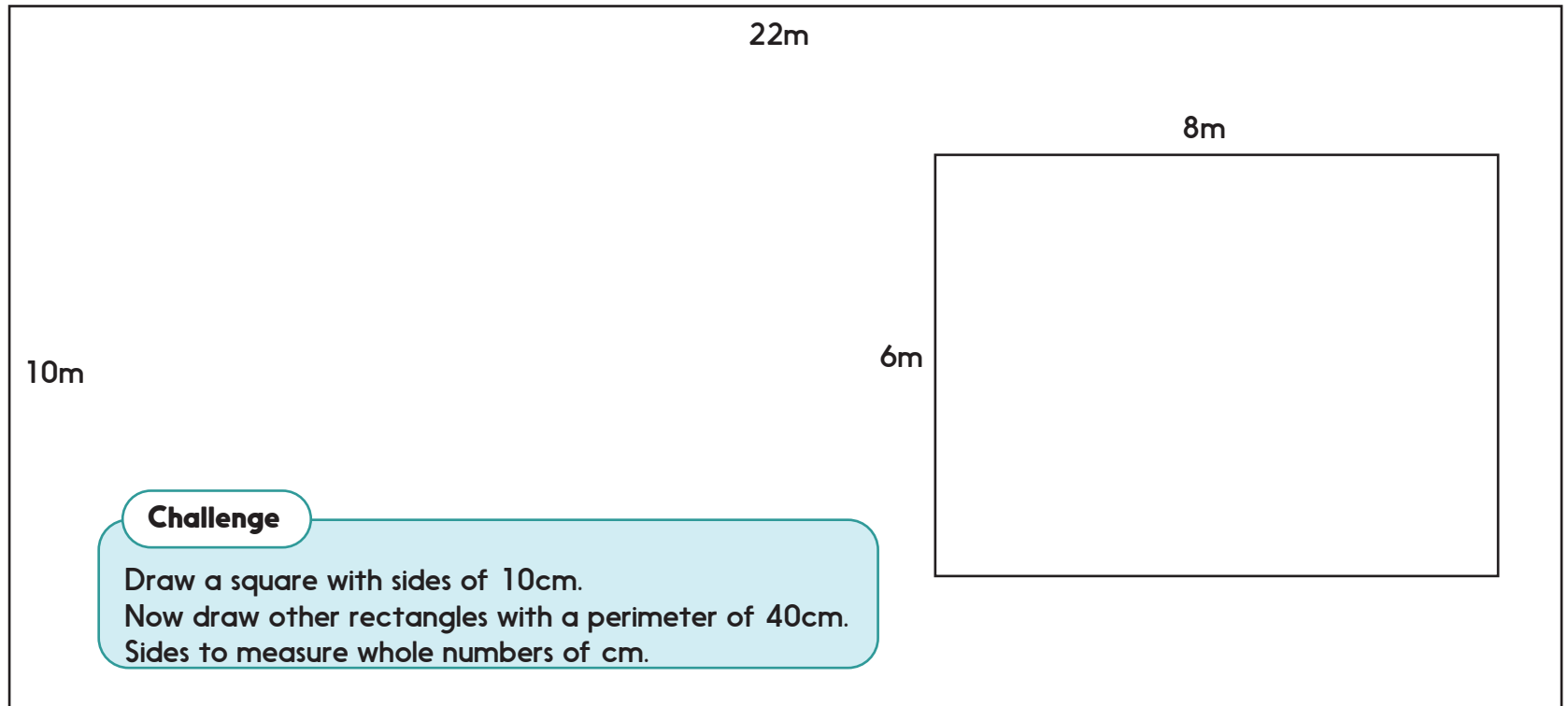
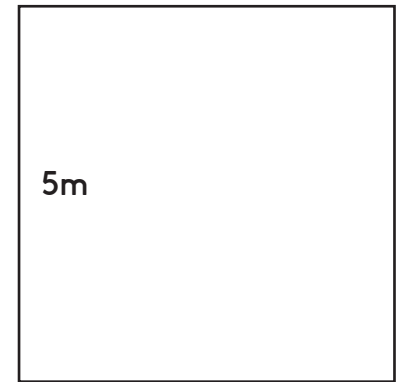
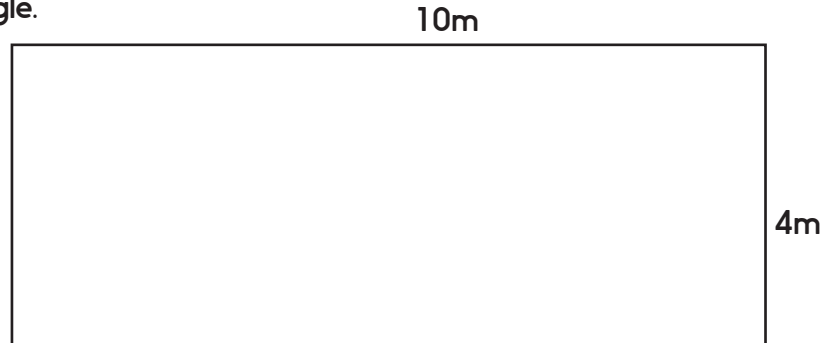
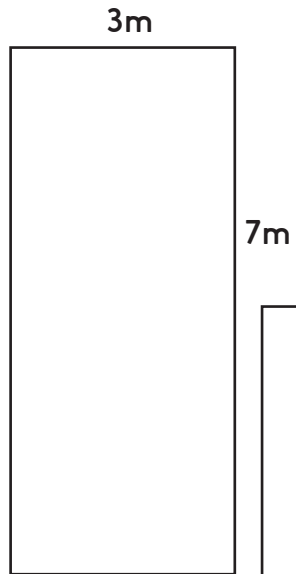
Calculate the perimeter of each rectangle.



Perimeter of rectangles

Sheet 3

Calculate the perimeter of each rectangle.



Challenge

Draw a square with sides of 10cm.
Now draw other rectangles with a perimeter of 40cm.
Sides to measure whole numbers of cm.

Calculating the perimeter of rectangles by doubling

Sheet 1

Calculate the perimeters of these rectangles from the length of two sides.

Remember to find the total and double.

Complete the table as far as you can, starting with bronze.

Length of long side	Length of short side	Total of sides given	Double the total to find the perimeter
5cm	3cm		
6cm	2cm		
8cm	4cm		
12cm	8cm		
15cm	10cm		
20cm	5cm		
28cm	22cm		
64cm	36cm		
57cm	20cm		
49cm	16cm		

Do any of the rectangles have the same perimeter?

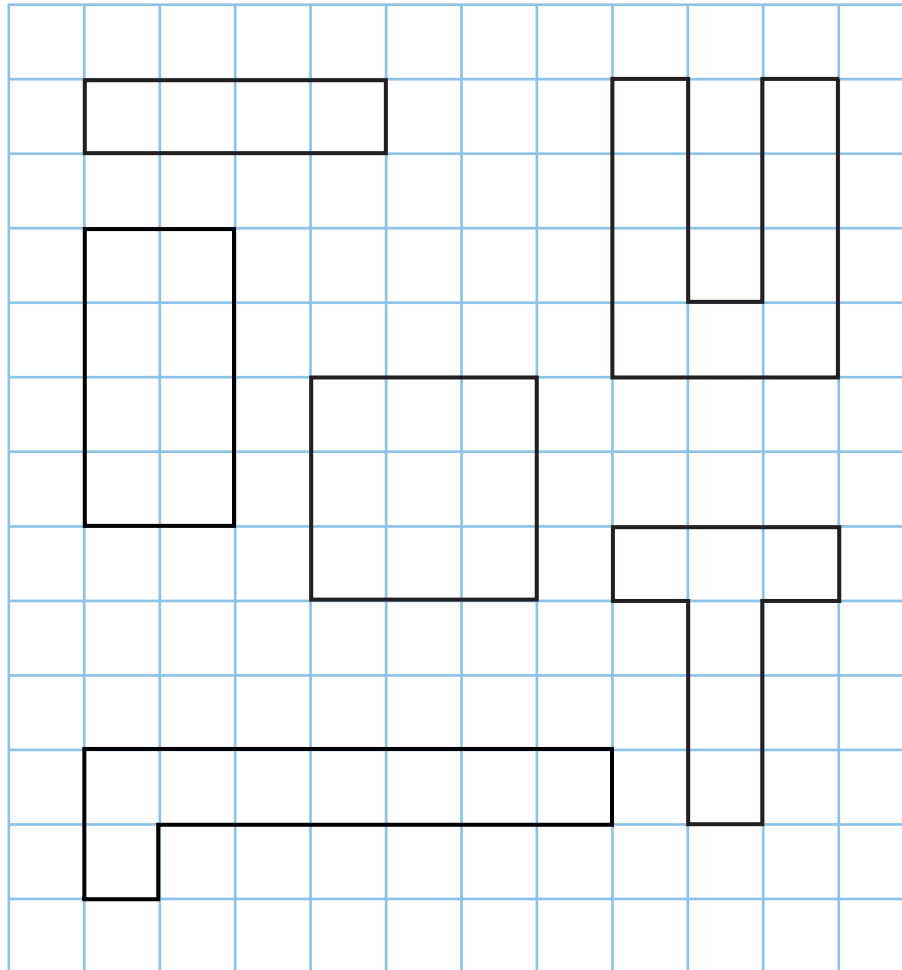
Challenge

What are the possible lengths of sides for a rectangle with a perimeter of 30cm?
Sides to measure whole numbers of cm.

Area and perimeter

Sheet 2

Label each shape with a letter A to F to describe its area and perimeter.



A Area: 9cm^2
Perimeter: 20cm

B Area: 8cm^2
Perimeter: 18cm

C Area: 4cm^2
Perimeter: 10cm

D Area: 9cm^2
Perimeter: 12cm

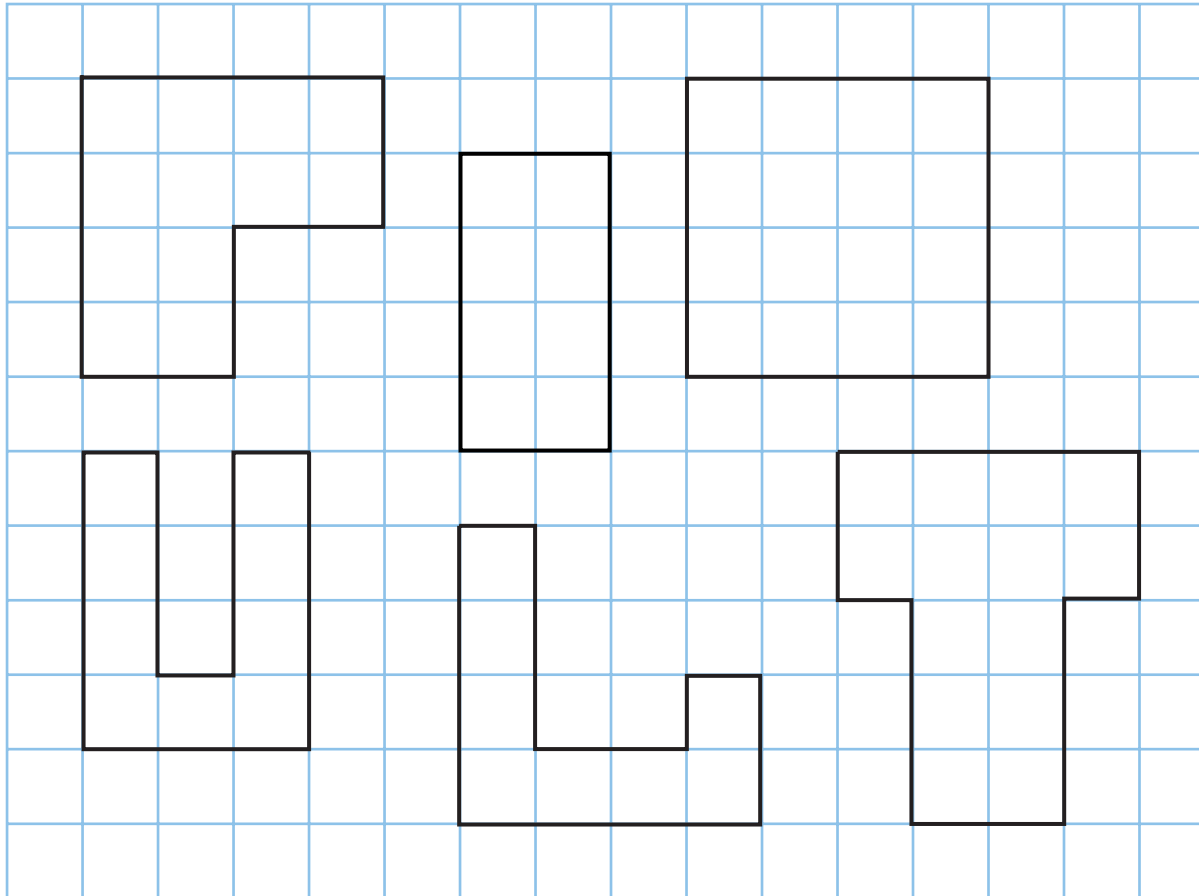
E Area: 6cm^2
Perimeter: 14cm

F Area: 8cm^2
Perimeter: 12cm

Area and perimeter

Sheet 3

Label each shape with a letter A to F to describe its area and perimeter.

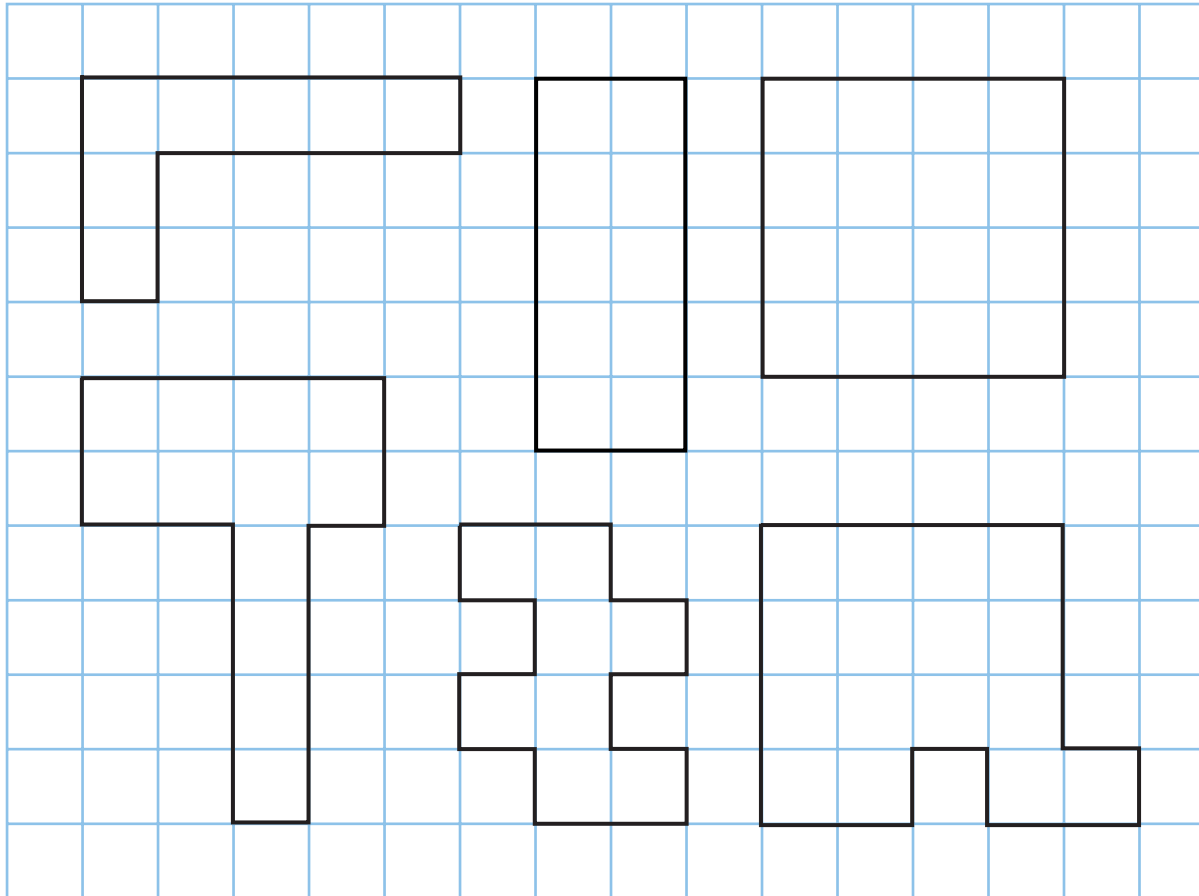


- A Area: 8cm^2
Perimeter: 18cm
- B Area: 12cm^2
Perimeter: 16cm
- C Area: 8cm^2
Perimeter: 12cm
- D Area: 14cm^2
Perimeter: 18cm
- E Area: 16cm^2
Perimeter: 16cm
- F Area: 9cm^2
Perimeter: 20cm

Area and perimeter

Sheet 4

Label each shape with a letter A to F to describe its area and perimeter.



A Area: 10cm^2
Perimeter: 14cm

B Area: 8cm^2
Perimeter: 18cm

C Area: 16cm^2
Perimeter: 20cm

D Area: 16cm^2
Perimeter: 16cm

E Area: 12cm^2
Perimeter: 20cm

F Area: 7cm^2
Perimeter: 16cm

Measures and data

Answers

Day 1 Y3 Rectangle areas Sheet 1

- A 6 cm²
- B 14 cm²
- C 5 cm²
- D 20 cm²
- E 16 cm²
- F 42 cm²
- G 18 cm²

In order of size from smallest to biggest: C, A, B, E, G, D, F

Which of these rectangles has the largest area? F

Challenge

Can you draw any other rectangles with the same area as shape F?

Rectangles with an area 42 cm² may also be 42 cm x 1 cm, 21 cm x 2 cm, or 14 cm x 3 cm.

Day 1 Y4 Rectilinear areas Sheet 2

- A 8 cm²
- B 10 cm²
- C 5 cm²
- D 24 cm²
- E 16 cm²
- F 18 cm²
- G 31 cm²

In order of size from smallest to biggest: C, A, B, E, F, D, G

Which of these shapes has the largest area? G

Day 2 Y3 Calculating the perimeter of regular shapes Sheet 1

Regular Shape	Length of one side	Number of sides	Perimeter
Equilateral triangle	15cm	3	45cm
Octagon	5cm	8	40cm
Pentagon	12cm	5	60cm
Decagon	7cm	10	70cm
Square	16cm	4	64cm
Heptagon	3cm	7	21cm
Hexagon	1½ cm	6	9cm
Nonagon	4cm	9	36cm

Measures and data

Answers

Day 2 Y3 Calculating the perimeter of regular shapes Sheet 1 continued

Challenge

What would the lengths of the sides of the following shapes be if the perimeter is 30cm?

a. 10 cm

b. $7\frac{1}{2}$ cm

c. 6 cm

d. 5 cm

Can you suggest 5 different possible side lengths for an irregular pentagon with a perimeter of 40cm?

Day 2 Y4 Perimeter of rectangles Sheet 2

$$7\text{m} + 5\text{m} + 7\text{m} + 5\text{m} = 24\text{m}$$

$$12\text{m} + 5\text{m} + 12\text{m} + 5\text{m} = 34\text{m}$$

$$15\text{m} + 4\text{m} + 15\text{m} + 4\text{m} = 38\text{m}$$

$$6\text{m} + 6\text{m} + 6\text{m} + 6\text{m} = 24\text{m}$$

Day 2 Y4 Perimeter of rectangles Sheet 3

$$7\text{m} + 3\text{m} + 7\text{m} + 3\text{m} = 20\text{m}$$

$$10\text{m} + 4\text{m} + 10\text{m} + 4\text{m} = 28\text{m}$$

$$5\text{m} + 5\text{m} + 5\text{m} + 5\text{m} = 20\text{m}$$

$$22\text{m} + 10\text{m} + 22\text{m} + 10\text{m} = 64\text{m}$$

$$8\text{m} + 6\text{m} + 8\text{m} + 6\text{m} = 28\text{m}$$

Challenge

Draw a square with sides of 10cm. Now draw other rectangles with a perimeter of 40cm.

e.g. sides of:

1cm x 19cm

2cm x 18cm

3cm x 17cm

4cm x 16cm

5cm x 15cm

6cm x 14cm

7cm x 13cm

8cm x 12cm

9cm x 11cm

Measures and data

Answers

Day 3 Y3 Calculating the perimeter of rectangles by doubling Sheet 1

Length of long side	Length of short side	Total of sides given	Double the total to find the perimeter
5cm	3cm	8cm	16cm
6cm	2cm	8cm	16cm
8cm	4cm	12cm	24cm
12cm	8cm	20cm	40cm
15cm	10cm	25cm	50cm
20cm	5cm	25cm	50cm
28cm	22cm	50cm	100cm
64cm	36cm	100cm	200cm
57cm	20cm	77cm	154cm
49cm	16cm	65cm	130cm

Bronze, long sides 5cm and 6cm have the same perimeter of 16cm.
Silver, long sides 15cm and 20cm have the same perimeter of 50cm.

Challenge

What are the possible lengths of sides for a rectangle with a perimeter of 30cm?

1cm and 14cm

2cm and 13cm

3cm and 12cm

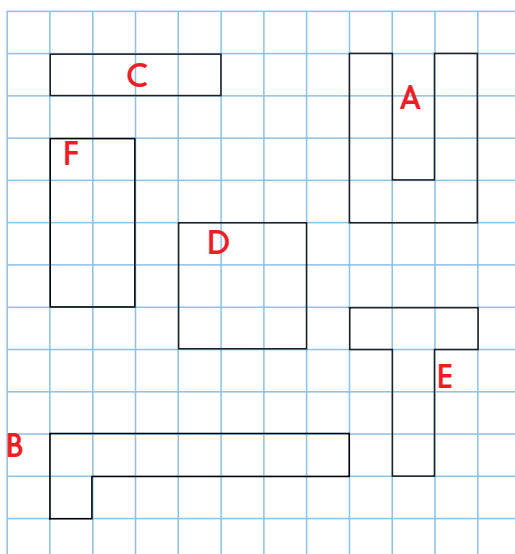
4cm and 11cm

5cm and 10cm

6cm and 9cm

7cm and 8cm

Day 3 Y4 Area and perimeter Sheet 2

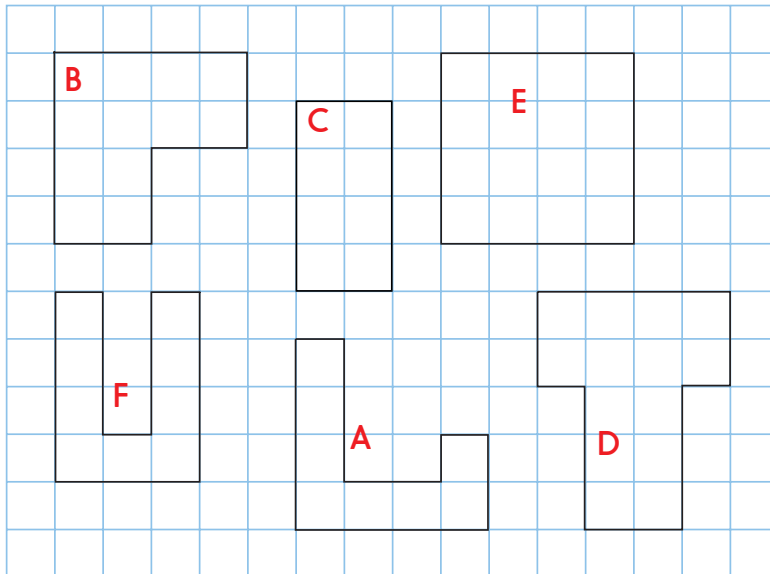


- A Area: 9cm^2
Perimeter: 20cm
- B Area: 8cm^2
Perimeter: 18cm
- C Area: 4cm^2
Perimeter: 10cm
- D Area: 9cm^2
Perimeter: 12cm
- E Area: 6cm^2
Perimeter: 14cm
- F Area: 8cm^2
Perimeter: 12cm

Measures and data

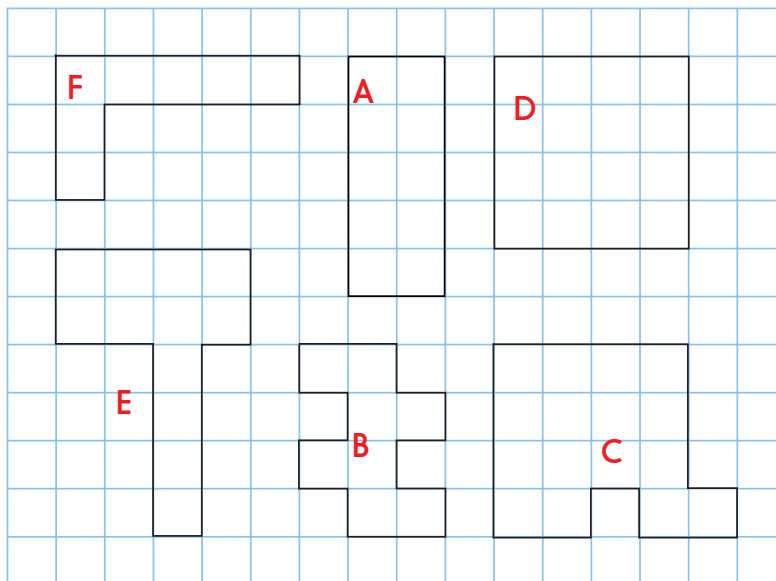
Answers

Day 3 Y4 Area and perimeter Sheet 3



- A Area: 8cm^2
Perimeter: 18cm
- B Area: 12cm^2
Perimeter: 16cm
- C Area: 8cm^2
Perimeter: 12cm
- D Area: 14cm^2
Perimeter: 18cm
- E Area: 16cm^2
Perimeter: 16cm
- F Area: 9cm^2
Perimeter: 20cm

Day 3 Y4 Area and perimeter Sheet 4



- A Area: 10cm^2
Perimeter: 14cm
- B Area: 8cm^2
Perimeter: 18cm
- C Area: 16cm^2
Perimeter: 20cm
- D Area: 16cm^2
Perimeter: 16cm
- E Area: 12cm^2
Perimeter: 20cm
- F Area: 7cm^2
Perimeter: 16cm