REVISE THIS TOPIC

Similar Shapes

1 Triangle *ABC* and Triangle *DEF* are similar.

÷5

×5

B

3 cm

A

4 cm

C

E

25 cm

D

20 cm

F

(a) Write down the scale factor of enlargement from triangle *ABC* to triangle *DEF*.

$20 \div 4$

............5............
(1)

(b) Work out the length of *EF*.

3×5

............15............ cm
(2)

(c) Work out the length of *AB*.

$25 \div 5$

............5............ cm
(2)

(Total for Question 1 is 5 marks)

1

2 Trapezium *ABCD* and Trapezium *EFGH* are similar.

÷1·5

B C   F   12 cm   G

6 cm   9 cm

A   12 cm   D   E   H

× 1·5
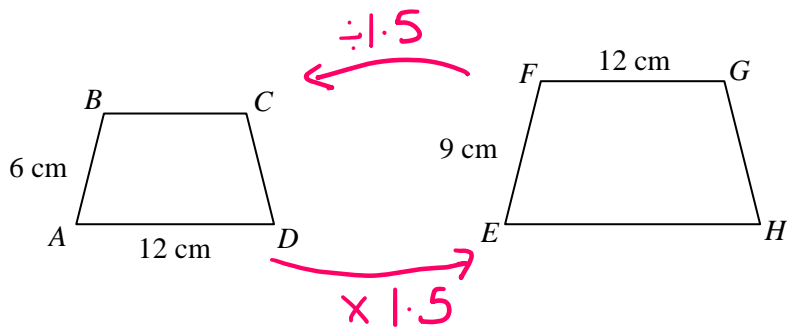
(a) Write down the scale factor of enlargement from Trapezium *ABCD* to Trapezium *EFGH*

$9 \div 6$

1·5

(1)

(b) Work out the length of *EH*.

12×1.5

18

cm

(2)

(c) Work out the length of *BC*.

$12 \div 1.5$

8

cm

(2)
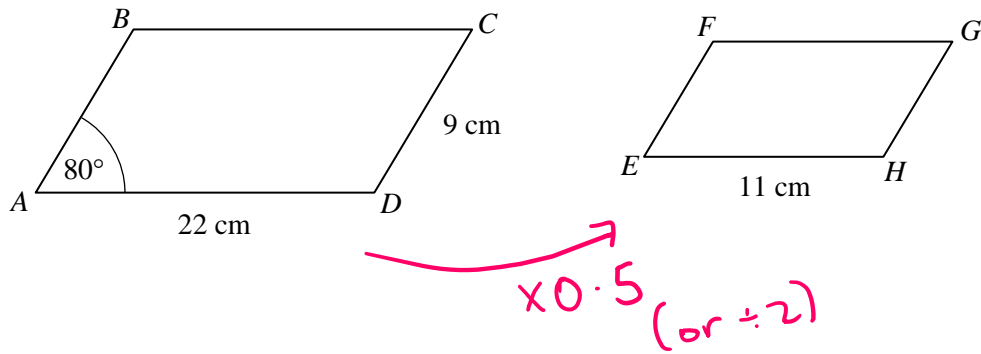
(Total for Question 2 is 5 marks)

1st

2

3 Parallelogram *ABCD* and Parallelogram *EFGH* are similar.

B ——————— C
80°
A ——————— D
22 cm
9 cm

F ——————— G
E ——————— H
11 cm

×0.5 (or ÷2)

(a) Write down the scale factor of enlargement from Parallelogram *ABCD* to Parallelogram *EFGH*

11 ÷ 22

0.5

(1)

(b) Work out the length of *GH*.

9 × 0.5   (or 9 ÷ 2)

4.5 cm

(2)

(c) Write down the size of angle *FEH*.

80 °

(1)

(Total for Question 3 is 4 marks)

1st

3

4 Triangle *ABC* and Triangle *DEF* are similar.

÷1.2

×1.2
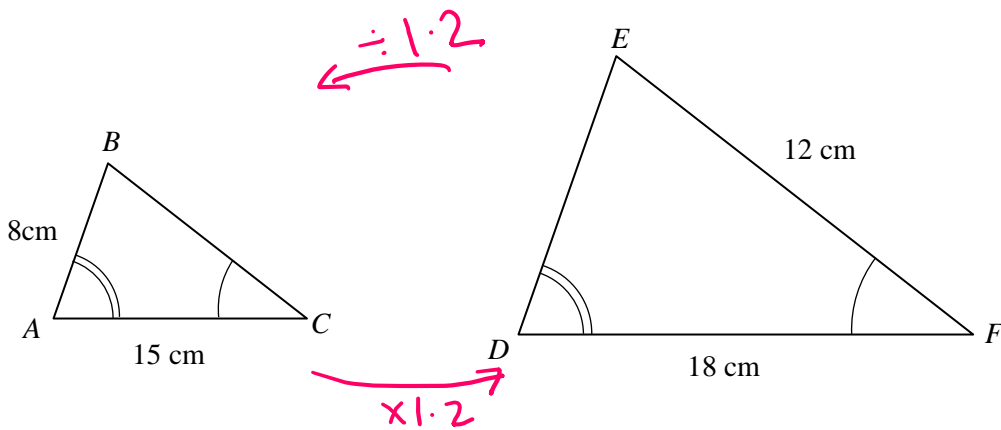
(a) Write down the scale factor of enlargement from Triangle *ABC* to Triangle *DEF*.

$18 \div 15$

1.2
(1)

(b) Work out the length of *DE*.

8×1.2

9.6 cm
(2)

(c) Work out the length of *BC*.

$12 \div 1.2$

10 cm
(2)

(Total for Question 4 is 5 marks)

4

5 Shape *ABCDE* and Shape *FGHIJ* are similar.

B   4.4 cm   C

2.8 cm

92° E

A   D

G   3.3 cm   H

1.05 cm

I

F   J
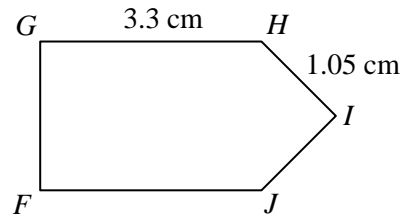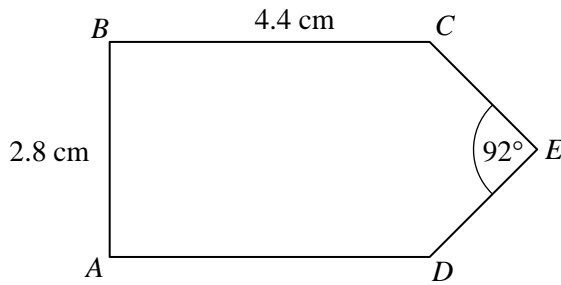
(a) Work out the length of *GF*.

$$3.3 \div 4.4 = 0.75$$
$$2.8 \times 0.75 = 2.1$$

2.1 cm

(2)

(b) Work out the length of *CE*.

$$1.05 \div 0.75 = 1.4$$

1.4 cm

(2)

(c) Write down the size of angle *HIJ*.

92 °

(1)

(Total for Question 5 is 5 marks)

6 Here are two rectangles.

30 cm

10 cm

42 cm

14 cm
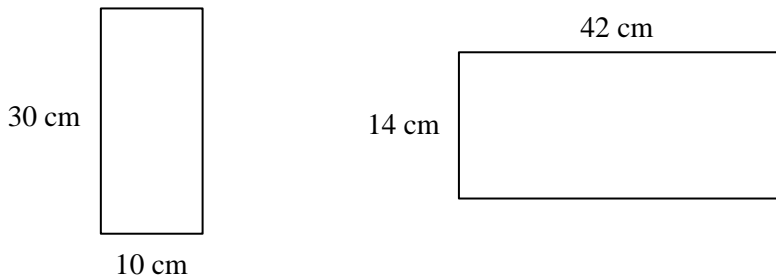
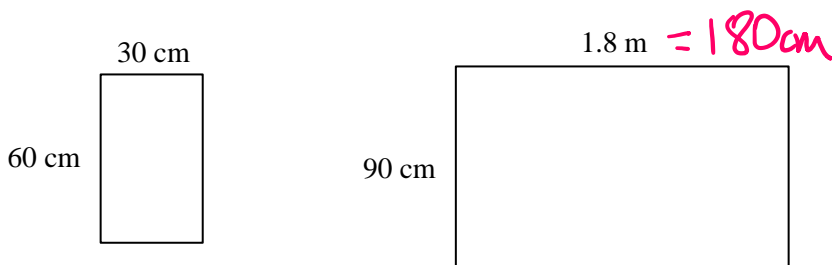Show that these rectangles are mathematically similar.

$$14 \div 10 = 1.4$$
$$42 \div 30 = 1.4$$

All sides have been enlarged by the same scale factor so the shapes are similar.

(Total for Question 6 is 2 marks)

7 Here are two rectangles.

30 cm

60 cm

1.8 m = 180cm

90 cm

Show that these rectangles are mathematically similar.
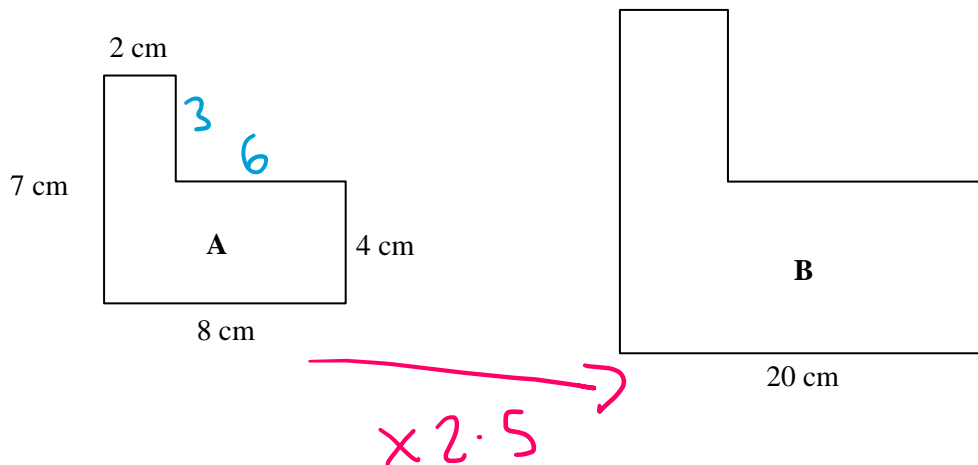
$$90 \div 30 = 3$$
$$180 \div 60 = 3$$

All sides have been enlarged by the same scale factor so the shapes are similar.

(Total for Question 7 is 2 marks)

8 Shape **A** and Shape **B** are similar.

2 cm

3

6

7 cm

A

4 cm

8 cm

B

20 cm

× 2.5

Work out the perimeter of shape **B**.

$20 \div 8 = 2.5$

$8 - 2 = 6$

$7 - 4 = 3$

Perimeter of A
$= 8 + 4 + 6 + 3 + 2 + 7$
$= 30 \text{ cm}$

$30 \times 2.5 = 75$

75

.... cm

(Total for Question 8 is 4 marks)

1st

7