Name:

Exam Style Questions

Scales and maps

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 283

1. A map has a scale of 1cm : 3 miles.
On the map, the distance between two towns is 7cm.

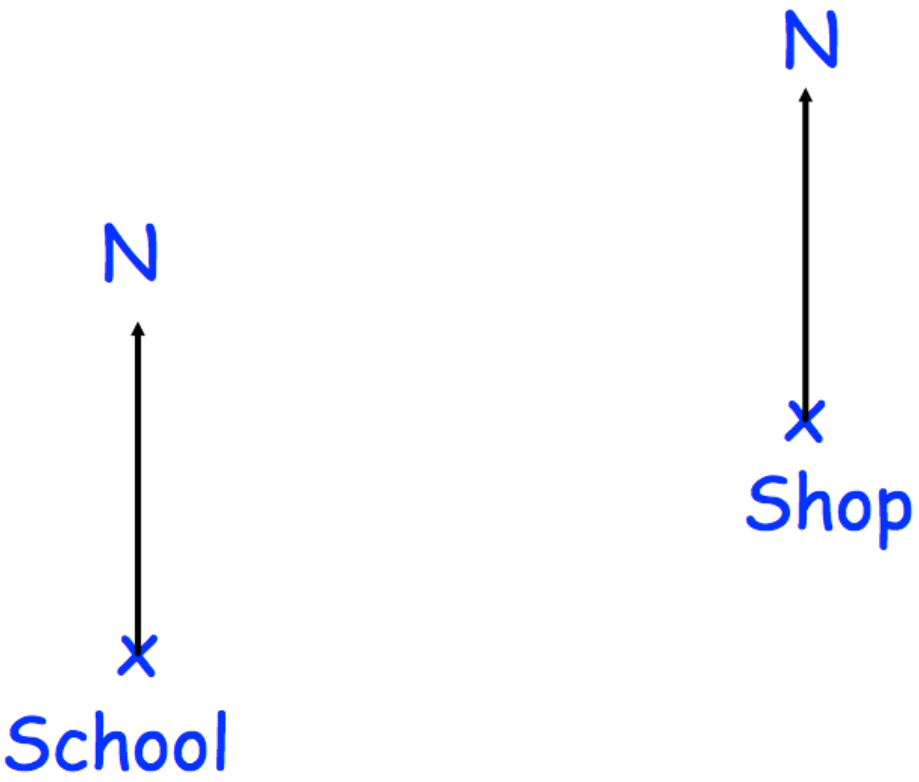
What is the actual distance between the two towns?
Include units for your answer.

.....

(2)

---

2. The diagram shows part of a map.
It shows the position of a school and a shop.



The scale of the map is 1cm = 100 metres.

Work out the real distance between the school and the shop.
Give your answer in metres.

.....m

(2)

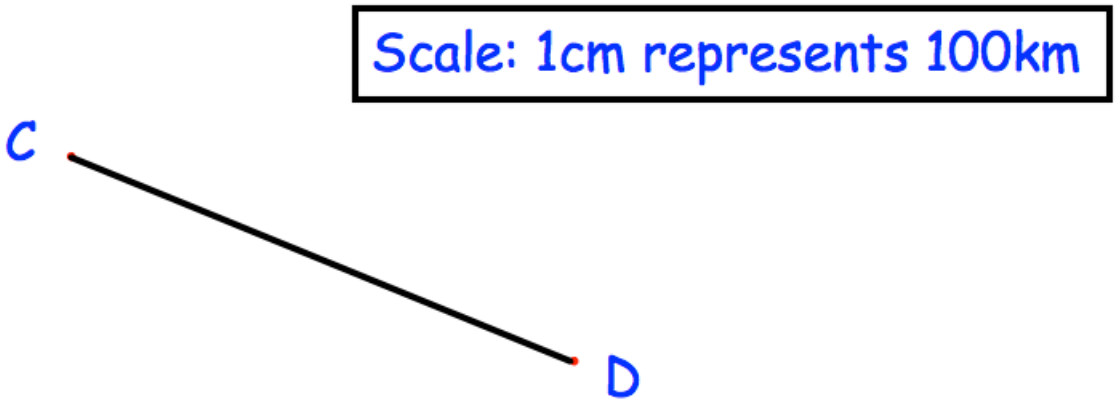
3. A map has a scale of 1cm : 4 kilometres.
The actual distance between two cities is 52 kilometres.

What is the distance between the cities on the map?

.....cm
(1)

---

4. The diagram shows a scale drawing.



(a) Use the diagram to calculate the actual distance from C to D.

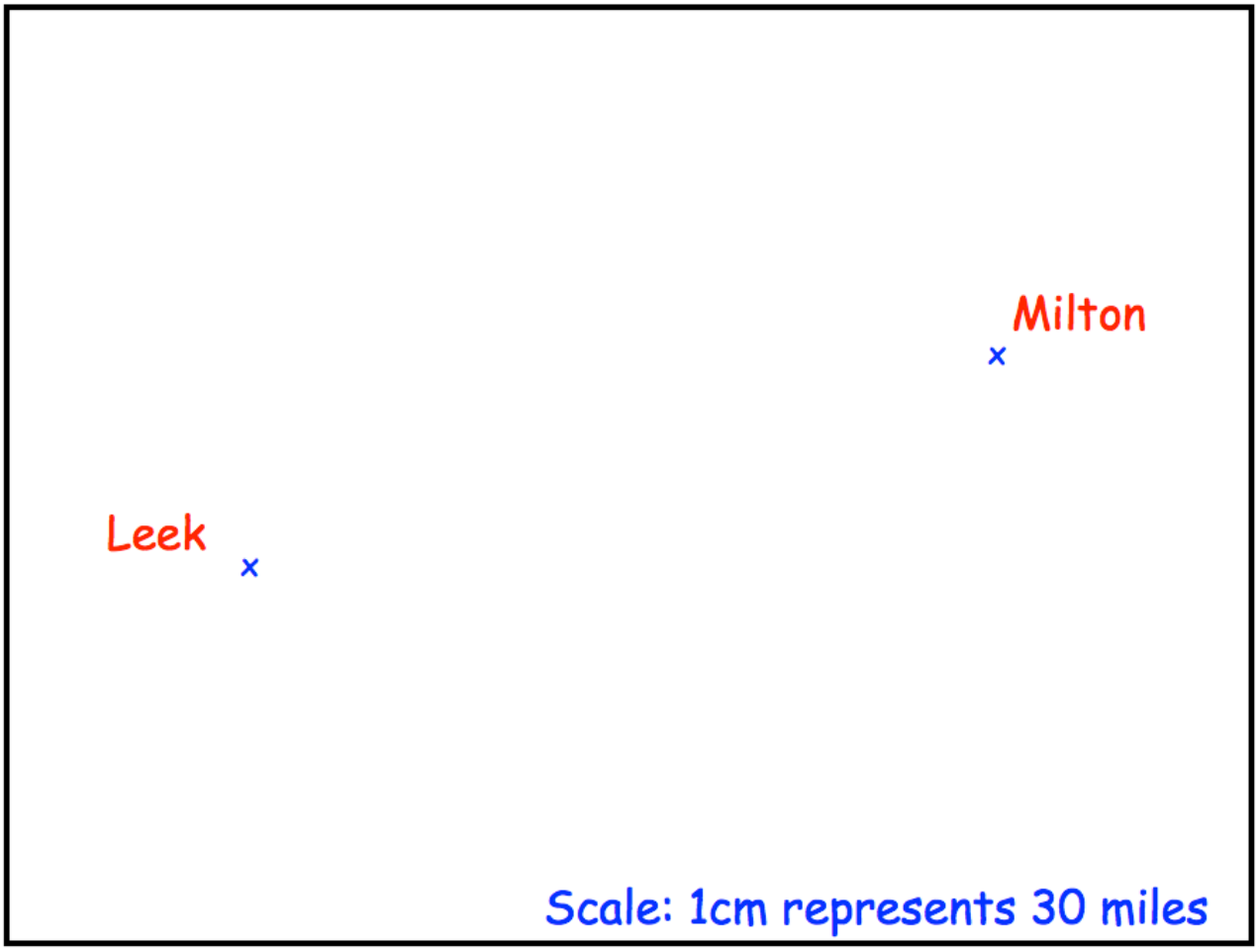
.....km
(2)

E is 300km due south of C.

(c) Show E on the diagram.

(1)

5. Here is a map.
The map shows two cities, Leek and Milton.



(a) Use the map to calculate the actual distance from Leek to Milton.

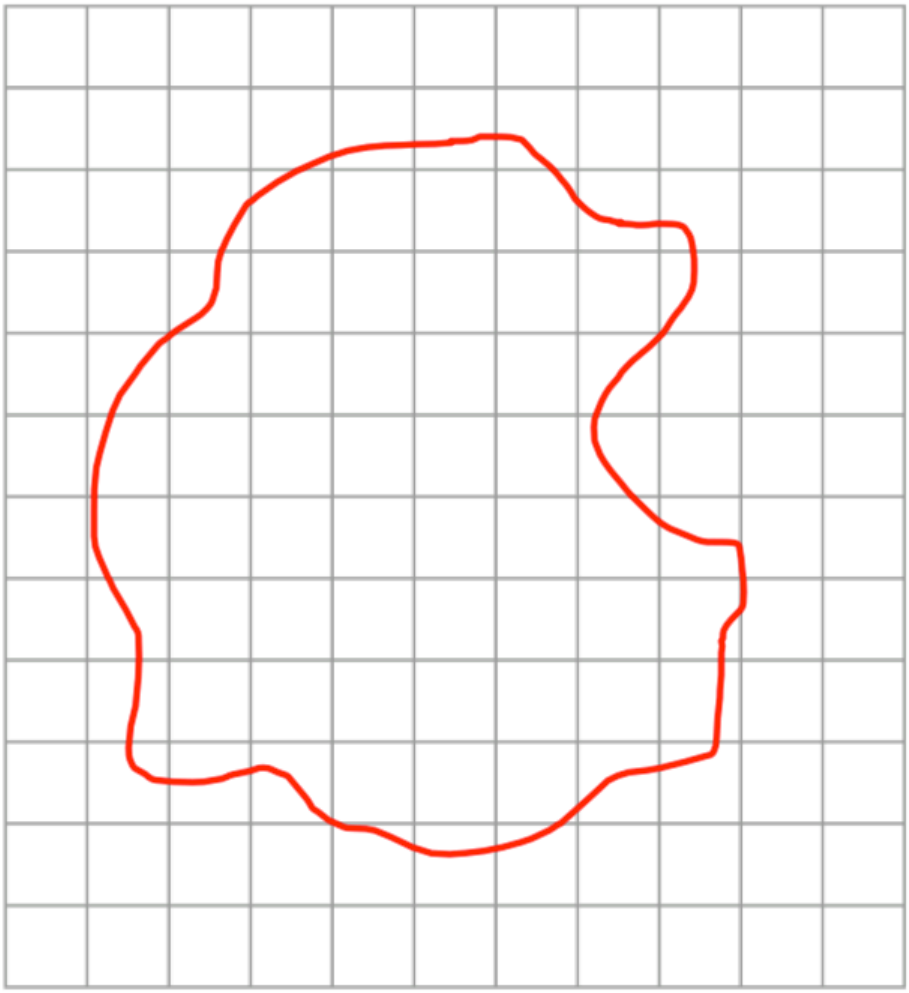
.....miles
(2)

Sandville is an equal distance from Leek and Milton

(b) How far is Sandville from Leek?

.....miles
(1)

6. Shown is a scale drawing of an island.
Each square on the grid has an area of 1cm²



The scale is 1cm² represents 10km²

Find an estimate for the area of the island.
Give your answer in km²

.....km²
(3)

7. A map has a scale of 1cm represents 2km.

(a) Write this scale as a ratio in its simplest form.

.....

(2)

(b) What is the actual length of a road measuring 5.5cm on the map?

.....

(1)

---

8. A map has a scale of 1cm represents 50 metres.

(a) Put a circle around the ratio which is equivalent to this.

1:50 1:500 1:5000 1:50000 1:500000 1:5000000

(2)

The distance between two shops on the map is 4.5cm

(b) What is the actual distance between the shops?

.....m

(2)

9. A map has a scale of 8cm to 1km.

(a) Write this scale as a ratio in its simplest form.

.....
(2)

The distance between two lakes is 4.5km

(b) How far will this be on the map?

.....cm
(2)

---

10. A map has a scale of 1:4000
On the map, the distance between two houses is 9cm.

What is the actual distance between the houses?
Give your answer in metres.

.....m
(3)

---

11. A scale drawing has a scale of 1:20
In real life the length of a boat is 150m

What is the length of the boat on the scale drawing?
Give your answer in centimetres.

.....cm
(3)

Name:

Exam Style Questions

Congruent Shapes
Similar Shapes

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
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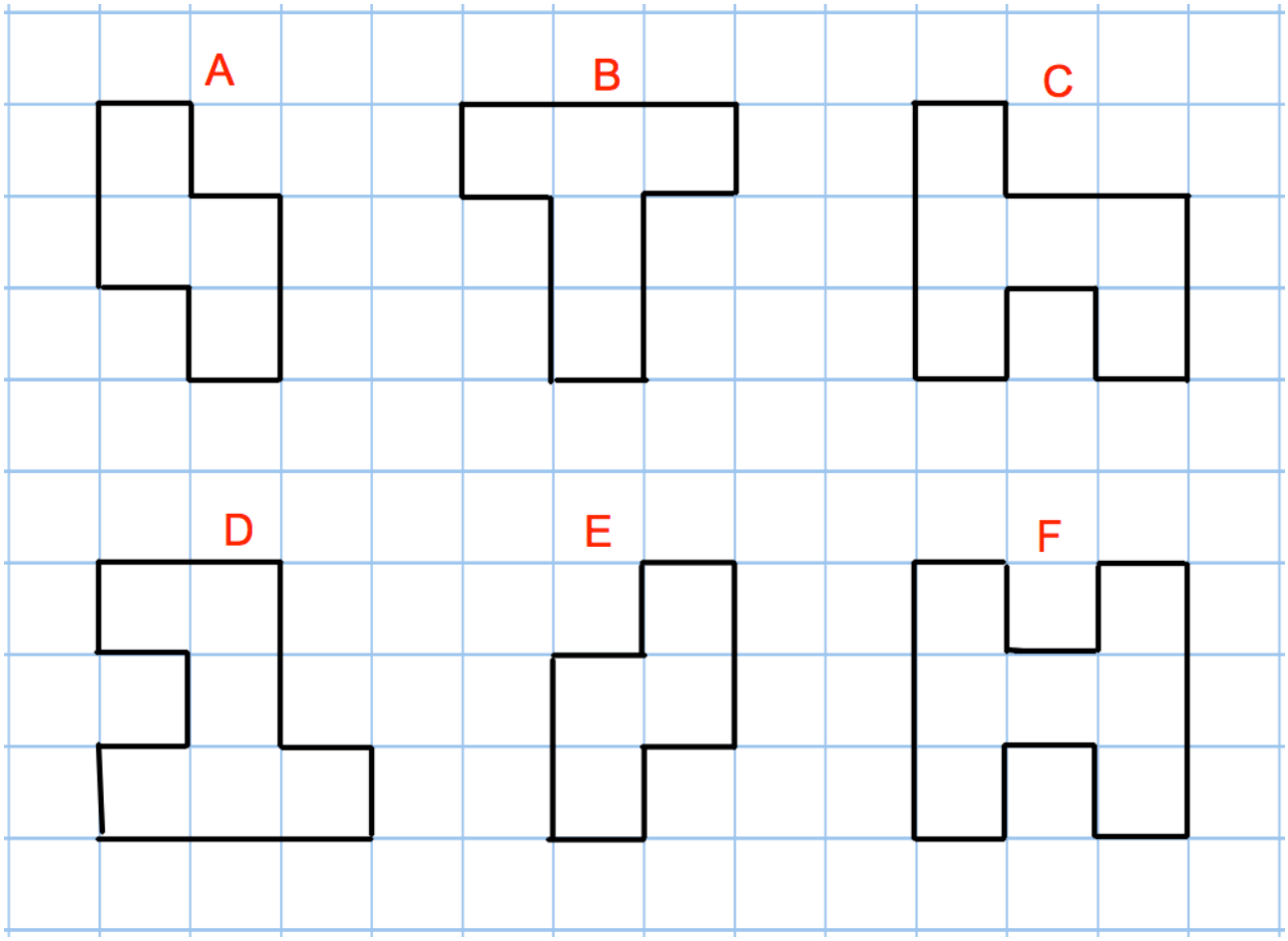
Revision for this topic

www.corbettmaths.com/contents

Video 66

Video 291

1. Here are six shapes.



(a) Which shape is congruent to shape E?

.....

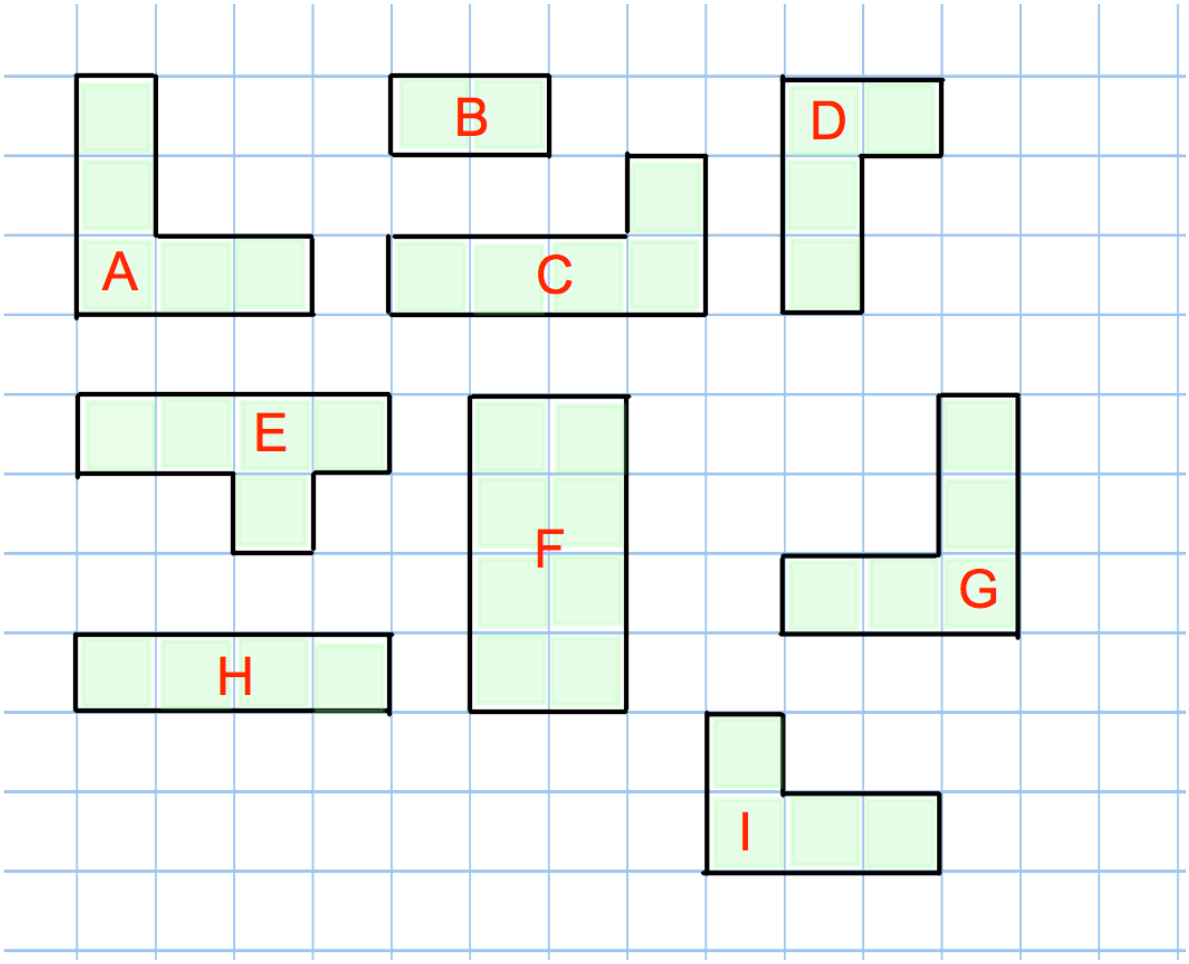
(1)

(b) Name two other congruent shapes.

..... and .....

(1)

2.



(a) Find a shape that is congruent to A.

.....

(1)

(b) Find another pair of congruent shapes.

..... and .....

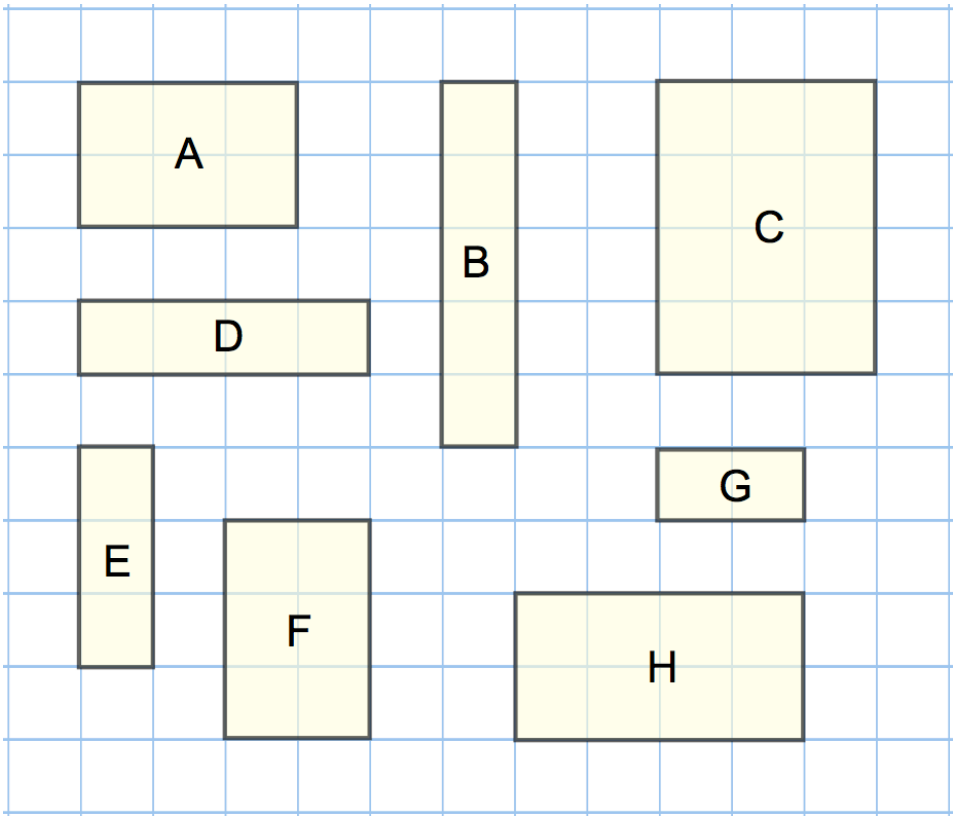
(1)

(c) Find a shape that is mathematically similar to B.

.....

(1)

3. Here are some rectangles on a grid of centimetre squares.



(a) Find the area of rectangle C.

.....cm²

(1)

(b) Find the perimeter of rectangle B.

.....cm

(1)

(c) Write down the names of the two rectangles that are congruent.

..... and .....

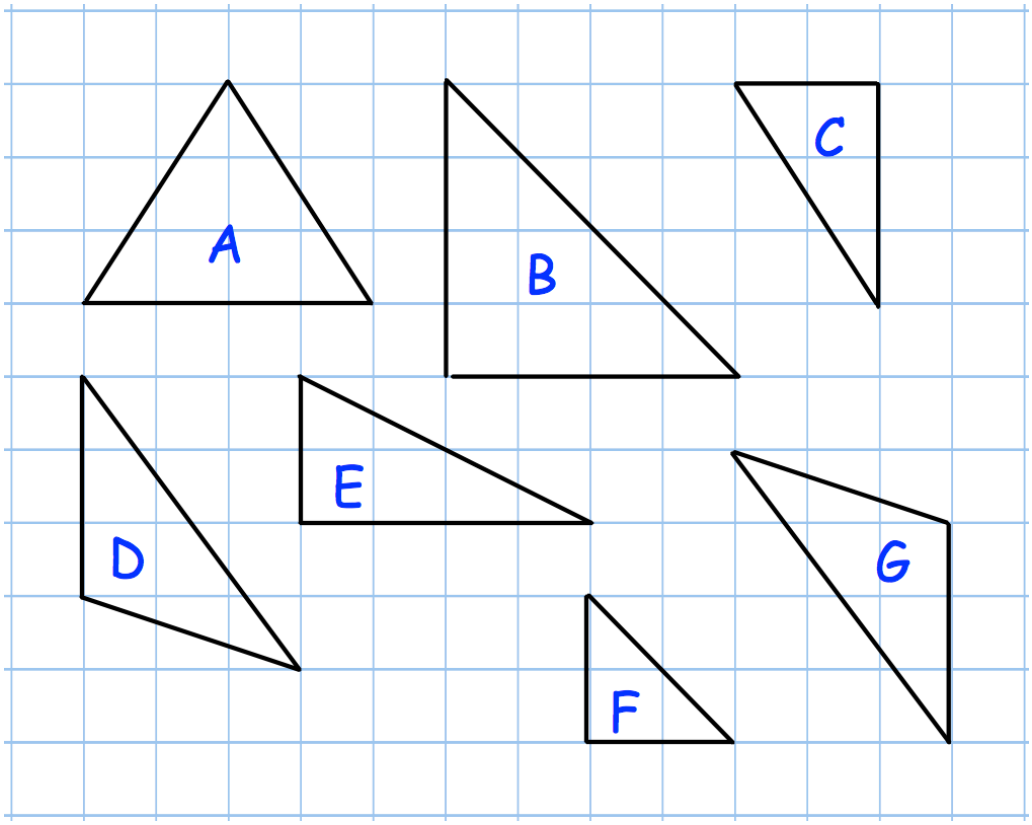
(1)

(d) Which rectangle is an enlargement of rectangle G?

.....

(1)

4. Shown below are some triangle on a centimetre grid.



(a) Write down the letters of the two triangles which are congruent.

..... and .....

(1)

Triangle B is an enlargement of triangle F.

(b) Write down the scale factor of this enlargement.

.....

(1)

(c) What kind of triangle is triangle A?

.....

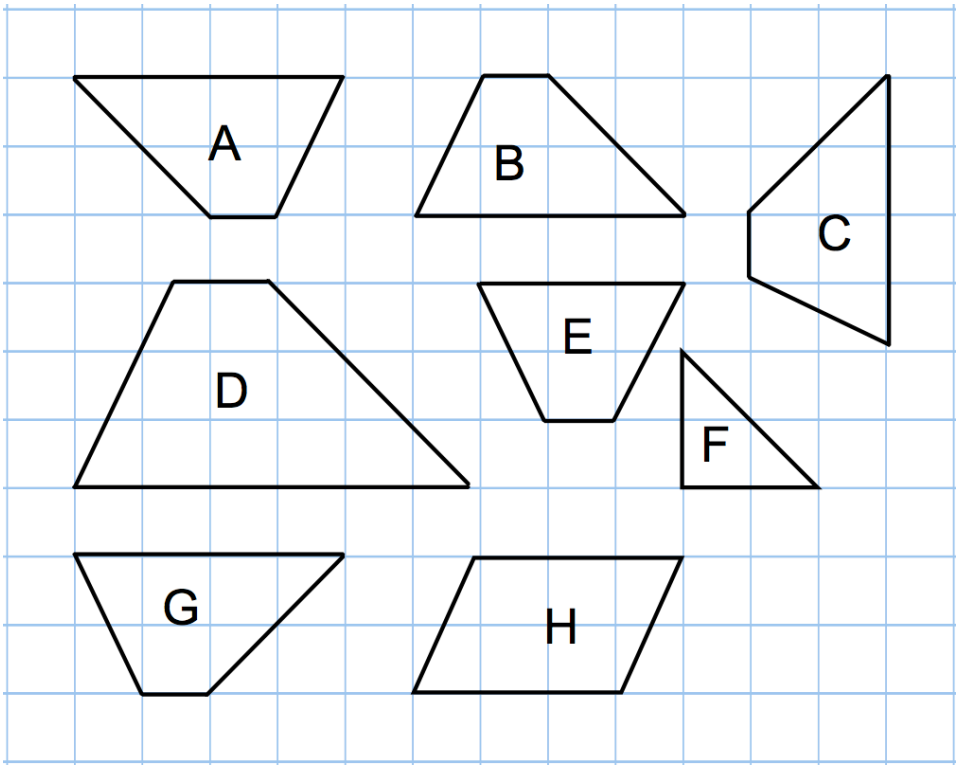
(1)

(d) What kind of triangle is triangle D?

.....

(1)

5. The grid shows eight shapes A, B, C, D, E, F, G and H.



Write down the letters of the shapes which are congruent to shape A.

.....

(2)

6. Triangles A and B are **similar**.

Tick the correct boxes.

	True	False	Maybe
If Triangle A is isosceles, Triangle B has to be isosceles.	☐	☐	☐
Triangles A and B have different size angles	☐	☐	☐
Triangle A has a larger area than Triangle B	☐	☐	☐

(3)

Similar Shapes: Sides 1

Video 292 on www.corbettmaths.com

Examples

Click here

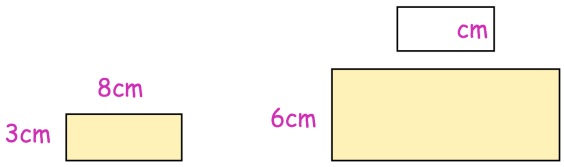
Scan here

Workout

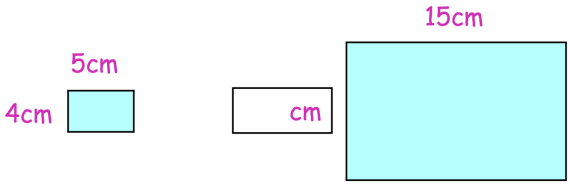
*The diagrams in this exercises are not drawn to scale.

Question 1: Below are pairs of similar shapes.
Find the missing lengths.

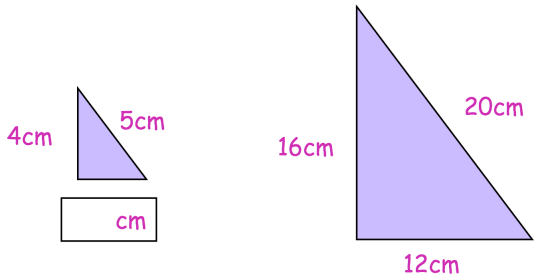
(a)



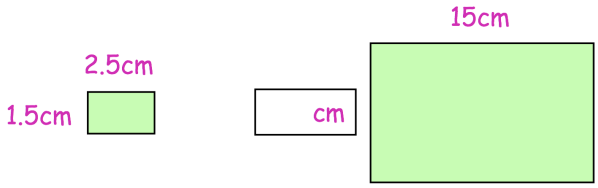
(b)



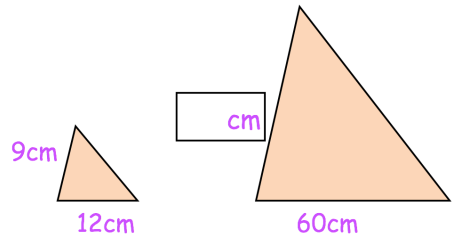
(c)



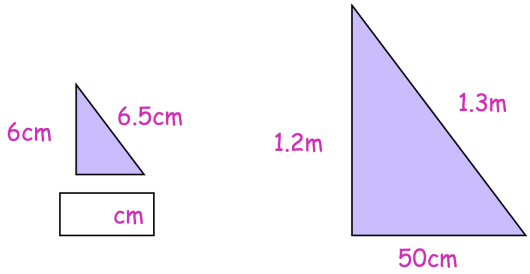
(d)



(e)

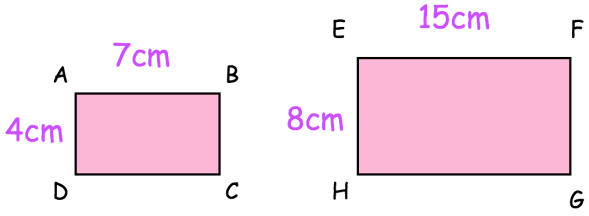


(f)

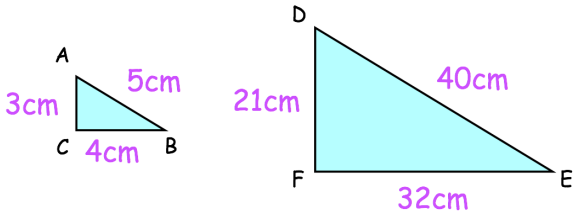


Question 2: These pairs of shapes are **not** similar.
Explain why.

(a)

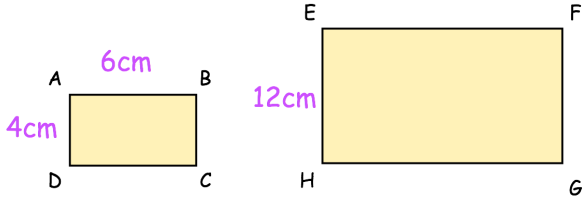


(b)



Question 3: Rectangles ABCD and EFGH are similar.

Work out the size of EF



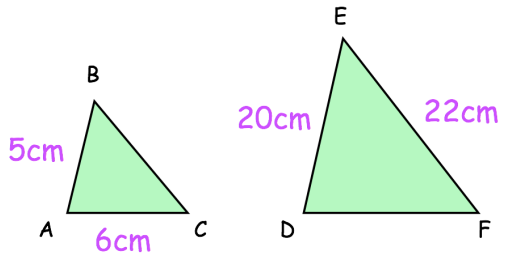
Similar Shapes: Sides 1

Video 292 on www.corbettmaths.com

Question 4: Triangles ABC and DEF are similar.

(a) Work out the length of DF

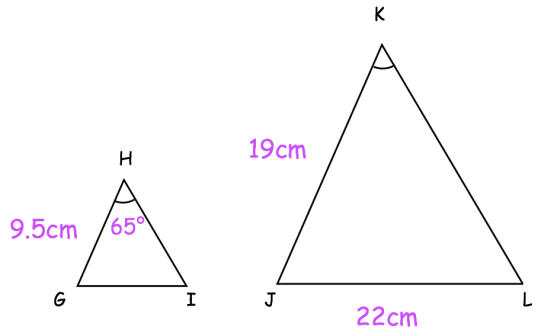
(b) Work out the length of BC



Question 5: Triangles GHI and JKL are similar.

(a) Write down the size of angle JKL

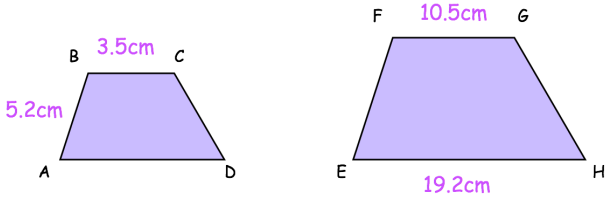
(b) Work out the length of GI



Question 6: Trapezium ABCD and trapezium EFGH are similar.

(a) Work out the length of EF

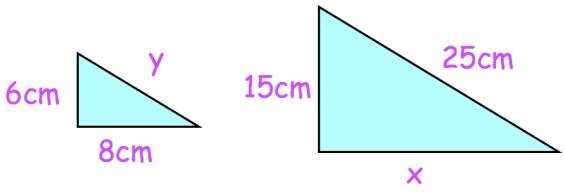
(b) Work out the length of AD



Question 7: The triangles below are similar

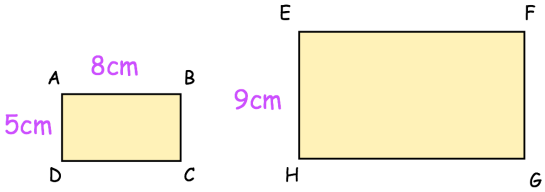
(a) Find the size of x

(b) Find the size of y



Question 8: Rectangles ABCD and EFGH are similar.

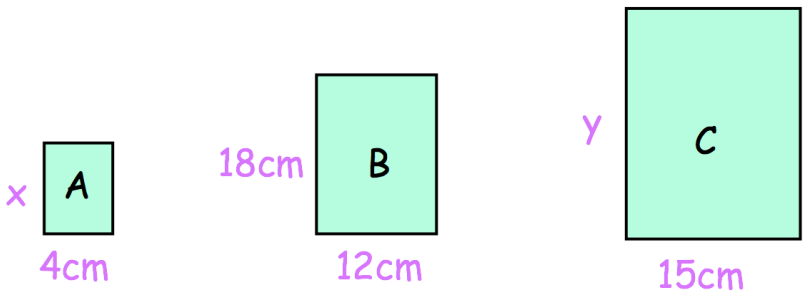
Work out the length of EF



Question 9: The diagram shows three similar rectangles.

(a) Work out the size of x

(b) Work out the size of y



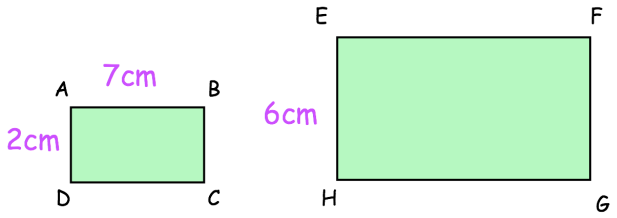
Similar Shapes: Sides 1

Video 292 on www.corbettmaths.com

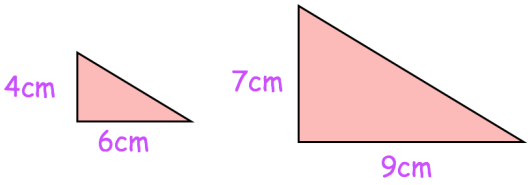
Apply

Question 1: Rectangles ABCD and EFGH are similar

Find the area of rectangle EFGH



Question 2: Here are two triangles



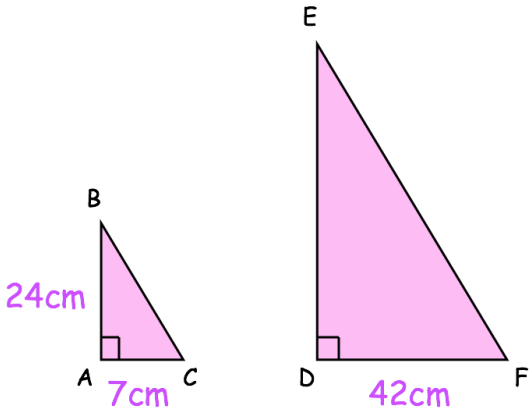
Finley says "the two triangles are similar because 3cm has been added to both the height and base of the smaller triangle."

Explain why Finley is incorrect.

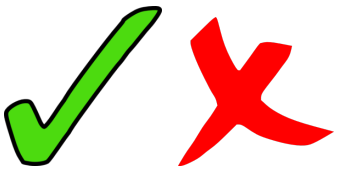
Question 3: ABC and DEF are similar right angled triangles.

AB = 24cm AC = 7cm DF = 42cm

Work out the length of EF.



Answers



Click here

Scan here

Name:

Exam Style Questions

Scales and maps

Corbettmaths

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Revision for this topic

www.corbettmaths.com/contents

Video 283

1. A map has a scale of 1cm : 3 miles.
On the map, the distance between two towns is 7cm.

What is the actual distance between the two towns?
Include units for your answer.

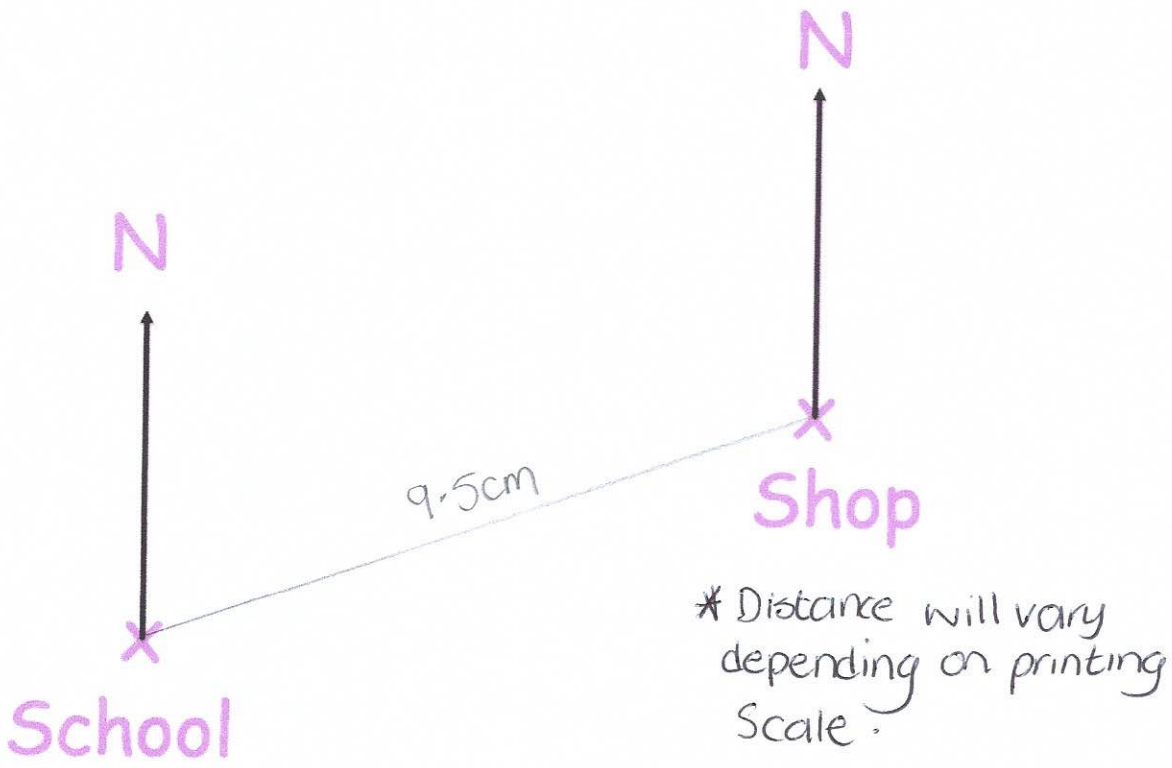
$7 \times 3 = 21$

21 miles

(2)

---

2. The diagram shows part of a map.
It shows the position of a school and a shop.



* Distance will vary depending on printing scale.

The scale of the map is 1cm = 100 metres.

Work out the real distance between the school and the shop.
Give your answer in metres.

Distance: 9.5cm

$9.5 \times 100 = 950$

950 m

(2)

5. Here is a map.
The map shows two cities, Leek and Milton.

(a) Use the map to calculate the actual distance from Leek to Milton.

10·5cm x 30

315 miles

(2)

Sandville is an equal distance from Leek and Milton

(b) How far is Sandville from Leek?

5·25cm
x 30

157·5 miles

(1)

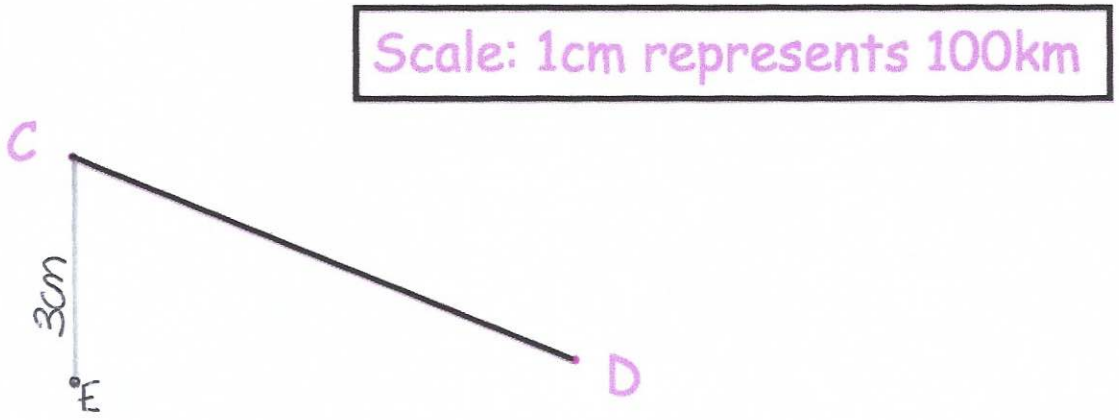
3. A map has a scale of 1cm : 4 kilometres.
The actual distance between two cities is 52 kilometres.

What is the distance between the cities on the map?

$52 \div 4 = 13$

.....13.....cm
(1)

4. The diagram shows a scale drawing.



(a) Use the diagram to calculate the actual distance from C to D.

$7.3\text{cm} \times 100$

.....730.....km
(2)

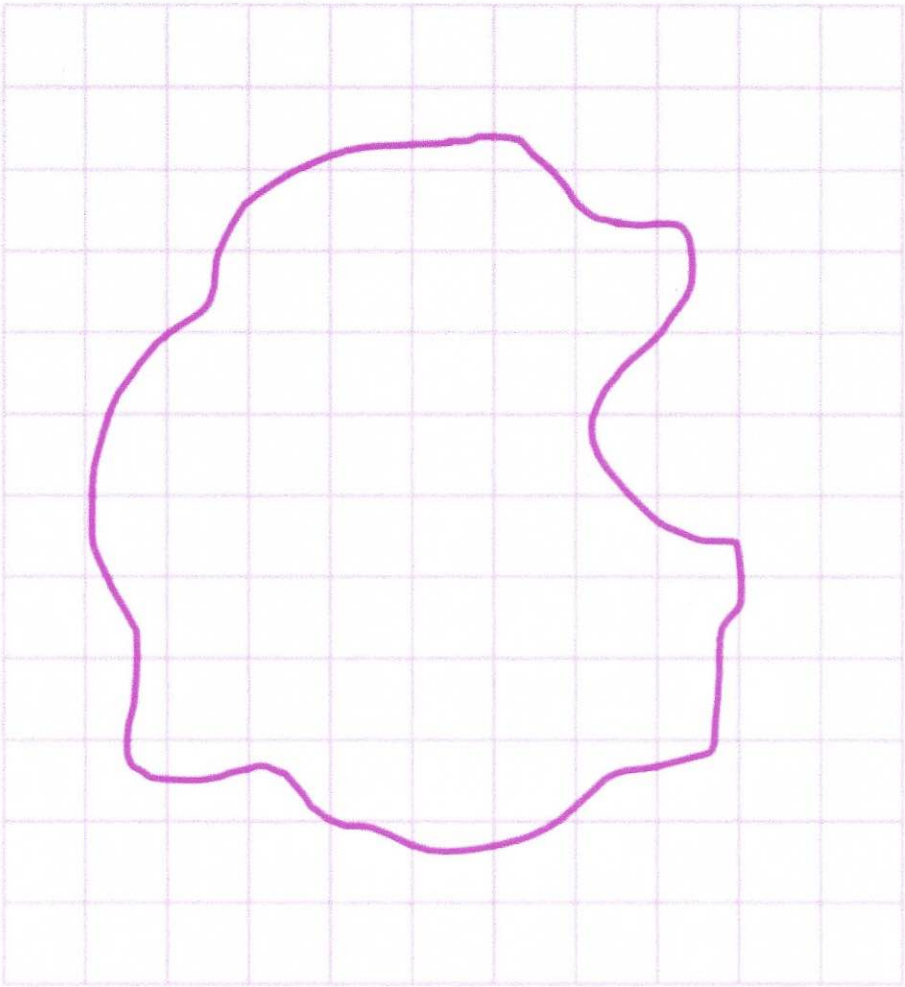
E is 300km due south of C.

(c) Show E on the diagram.

3cm

(1)

6. Shown is a scale drawing of an island.
Each square on the grid has an area of $1cm^2$



The scale is $1cm^2$ represents $10km^2$

Find an estimate for the area of the island.
Give your answer in km^2

480 ..... km^2

(3)

*Allow range of
$450km^2 - 500km^2$ *

7. A map has a scale of 1cm represents 2km.

(a) Write this scale as a ratio in its simplest form.

1: 200,000

(2)

(b) What is the actual length of a road measuring 5.5cm on the map?

11 Km

(1)

---

8. A map has a scale of 1cm represents 50 metres.

(a) Put a circle around the ratio which is equivalent to this.

1:50 1:500 (1:5000) 1:50000 1:500000 1:5000000

(2)

The distance between two shops on the map is 4.5cm

(b) What is the actual distance between the shops?

225 m

(2)

9. A map has a scale of 8cm to 1km.

(a) Write this scale as a ratio in its simplest form.

1:12500

(2)

The distance between two lakes is 4.5km

(b) How far will this be on the map?

36 cm

(2)

---

10. A map has a scale of 1:4000
On the map, the distance between two houses is 9cm.

What is the actual distance between the houses?
Give your answer in metres.

9 x 4000 = 36000cm

360 m

(3)

---

11. A scale drawing has a scale of 1:20
In real life the length of a boat is 150m

What is the length of the boat on the scale drawing?
Give your answer in centimetres.

150 ÷ 20 = 7.5 metres

750 cm

(3)

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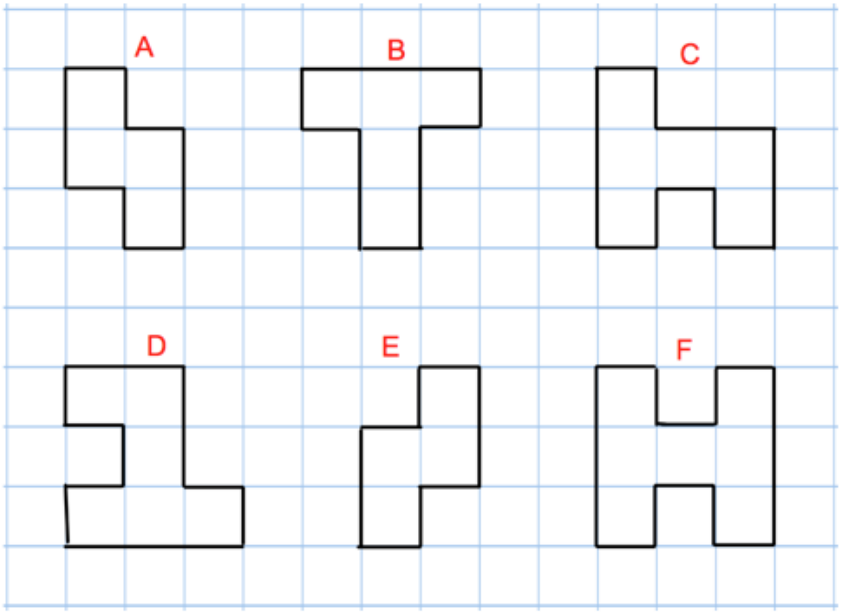
www.corbettmaths.com/contents

Video 66
Video 291

1. Here are six shapes.



(a) Which shape is congruent to shape E?

A

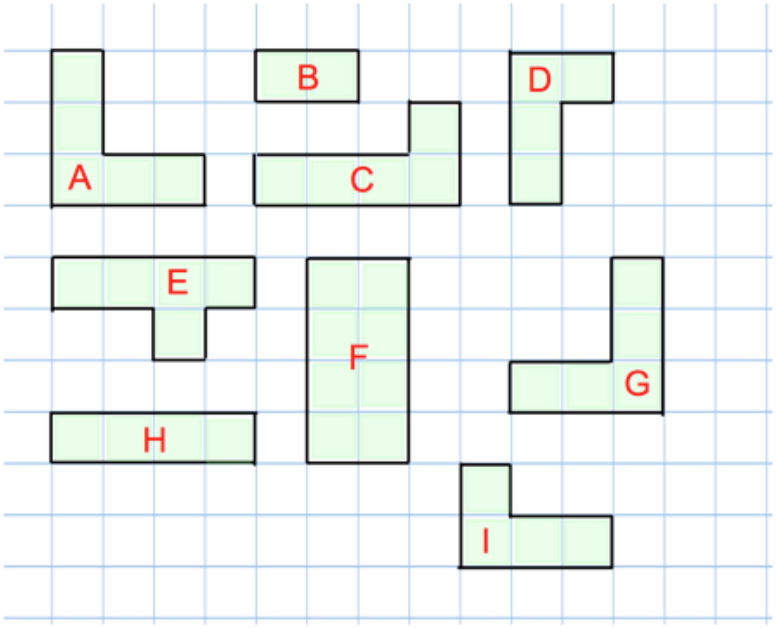
(1)

(b) Name two other congruent shapes.

C and D

(1)

2.



(a) Find a shape that is congruent to A.

G

.....

(1)

(b) Find another pair of congruent shapes.

D ..... and ..... I .....

(1)

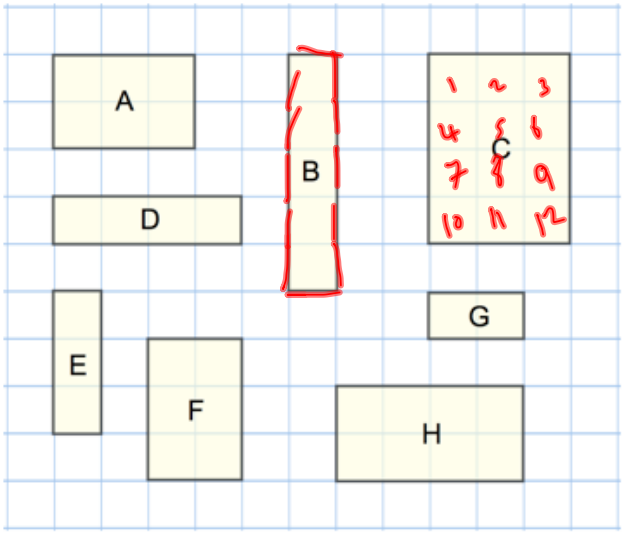
(c) Find a shape that is mathematically similar to B.

F

.....

(1)

3. Here are some rectangles on a grid of centimetre squares.



(a) Find the area of rectangle C.

12 .....cm²

(1)

(b) Find the perimeter of rectangle B.

12 .....cm

(1)

(c) Write down the names of the two rectangles that are congruent.

A ..... and F .....

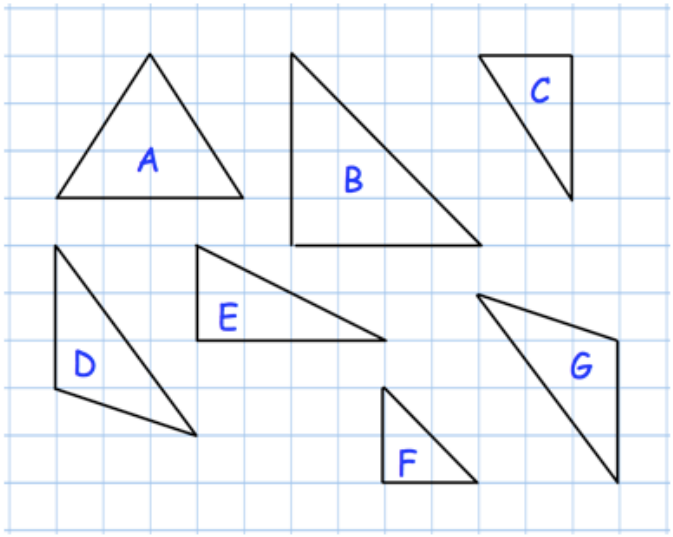
(1)

(d) Which rectangle is an enlargement of rectangle G?

H .....

(1)

4. Shown below are some triangle on a centimetre grid.



(a) Write down the letters of the two triangles which are congruent.

D and G

(1)

Triangle B is an enlargement of triangle F.

(b) Write down the scale factor of this enlargement.

2

(1)

(c) What kind of triangle is triangle A?

isosceles

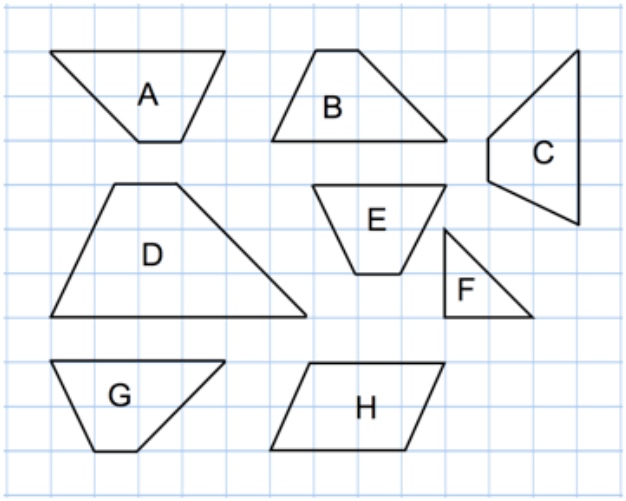
(1)

(d) What kind of triangle is triangle D?

scalene

(1)

5. The grid shows eight shapes A, B, C, D, E, F, G and H.



Write down the letters of the shapes which are congruent to shape A.

B, C, G

(2)

6. Triangles A and B are **similar**.

Tick the correct boxes.

	True	False	Maybe
If Triangle A is isosceles, Triangle B has to be isosceles.	☑	☐	☐
Triangles A and B have different size angles	☐	☑	☐
Triangle A has a larger area than Triangle B	☐	☐	☑

(3)

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1

a) 16cm b) 12cm c) 3cm d) 45cm

e) 45cm f) 2.5cm

2a) 4 x 2 = 8, but 7x2 does not make 15

b) AB and CB have been multiplied by 8, but AC has been multiplied by 7

3) 18cm

4a) 24cm b) 5.5cm

5a) 65^{o} b) 11cm

6a) 15.6cm b) 6.4cm

7a) 20cm b) 10cm

8) 14.4cm

9) 22.5cm

Apply:

1) $126cm^{2}$

2) For shapes to be similar, corresponding sides must be multiplied by a common scale factor.

3) 150cm