SIMILAR SHAPES

Pearson Edexcel – Thursday 4 June 2020 - Paper 2 (Calculator) Higher Tier

1.

14 Here are two squares, **A** and **B**.

The length of each side of square **B** is 4 cm greater than the length of each side of square **A**.
The area of square **B** is 70 cm^2 greater than the area of square **A**.

Find the area of square **B**.
Give your answer correct to 3 significant figures.
You must show all your working.

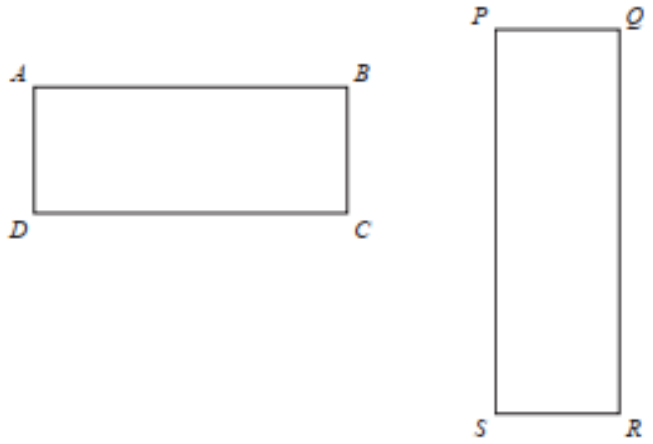
..... cm^2

(Total for Question 14 is 4 marks)

Pearson Edexcel - Tuesday 21 May 2019 - Paper 1 (Non-Calculator) Higher Tier

2.

7 Here are two rectangles.



$QR = 10\,\text{cm}$
$BC = PQ$

The perimeter of $ABCD$ is 26 cm
The area of $PQRS$ is 45 cm^2

Find the length of AB.

..... cm

(Total for Question 7 is 4 marks)

Pearson Edexcel - Tuesday 12 June 2018 - Paper 3 (Calculator) Higher Tier

3.

13 Here are two similar solid shapes.

A

B

surface area of shape **A** : surface area of shape **B** = 3 : 4

The volume of shape **B** is 10 cm³

Work out the volume of shape **A**.
Give your answer correct to 3 significant figures.

..... cm³

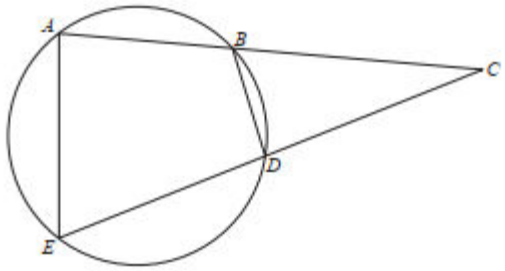
(Total for Question 13 is 3 marks)

Pearson Edexcel - Wednesday 4 November 2015 - Paper 1 (Non-Calculator) Higher Tier

4.

*22

Diagram **NOT** accurately drawn



A, B, D and E are points on a circle.
ABC and EDC are straight lines.

Prove that triangle BCD is similar to triangle ECA.
You must give reasons for your working.

(Total for Question 22 is 5 marks)

Pearson Edexcel - Monday 9 June 2014 - Paper 1 (Non-Calculator) Higher Tier

5.

20 Steve has a photo and a rectangular piece of card.

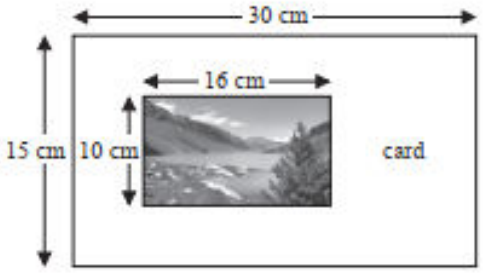
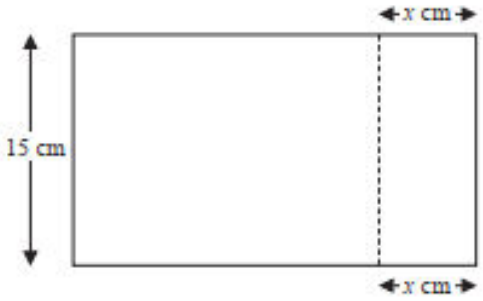


Diagram **NOT** accurately drawn

The photo is 16 cm by 10 cm.
The card is 30 cm by 15 cm.

Steve cuts the card along the dotted line shown in the diagram below.



Steve throws away the piece of card that is 15 cm by x cm.
The piece of card he has left is mathematically similar to the photo.

Work out the value of x.

.....

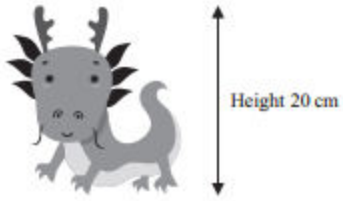
(Total for Question 20 is 3 marks)

Pearson Edexcel - Wednesday 6 November 2013 - Paper 1 (Non-Calculator) Higher Tier

6.

16 A company makes monsters.

The company makes small monsters with a height of 20 cm.



A small monster has a surface area of 300 cm².

The company also makes large monsters with a height of 120 cm.

A small monster and a large monster are mathematically similar.

Work out the surface area of a large monster.

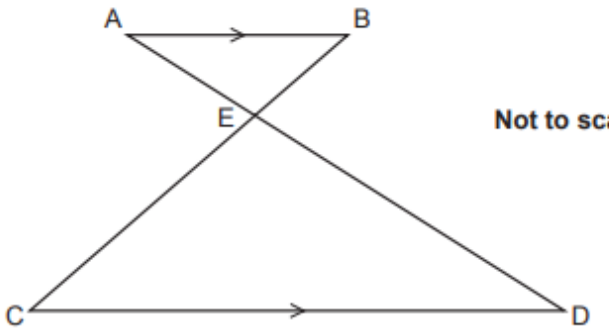
..... cm²

(Total for Question 16 is 3 marks)

OCR GSCE – Thursday 6 June 2019 – Paper 5 (Non-Calculator) Higher Tier

7.

14 In the diagram AB is parallel to CD.
AED and BEC are straight lines.



Not to scale

Prove that triangle ABE is similar to triangle CDE.

.....

.....

.....

..... **[3]**

OCR GSCE – Tuesday 11 June 2019 – Paper 6 (Calculator) Higher Tier

8.

21 Toy building bricks are available in two sizes, small and large.
The small and large bricks are mathematically similar.

A small brick has volume $8\,cm^3$ and width 2.1 cm.
A large brick has volume $15.625\,cm^3$.

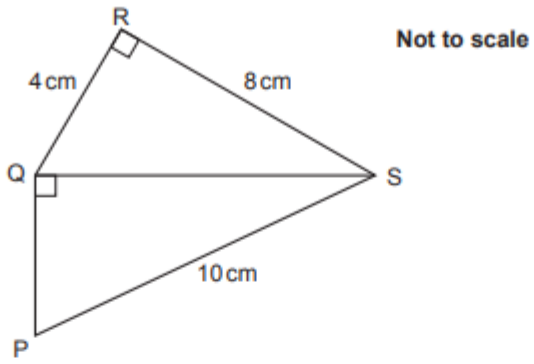
Calculate the width of a large brick.

..... cm **[4]**

OCR GSCE – Tuesday 12 June 2018 – Paper 6 (Calculator) Higher Tier

9.

12 The diagram below shows two right-angled triangles.



Prove that triangles PQS and QRS are similar.

.....

.....

.....

.....

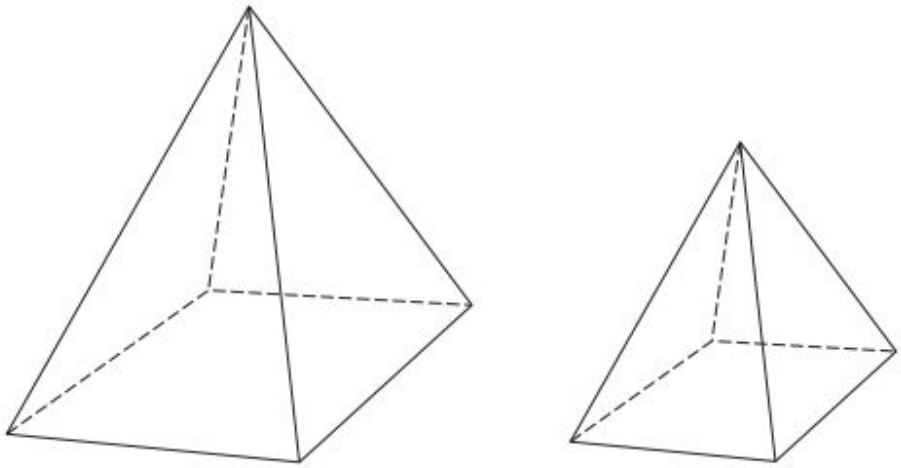
.....

..... **[5]**

OCR GSCE – Sample Papers – Paper 6 (Calculator) Higher Tier

10.

12 Two similar pyramids A and B have surface areas $180\,cm^2$ and $80\,cm^2$ respectively.



Pyramid A

Pyramid B

The volume of pyramid A is $810\,cm^3$.

Show that the volume of pyramid B is $240\,cm^3$. **[5]**

AQA GSCE – Tuesday 19 May 2020 – Paper 1 (Non - Calculator) Higher Tier

11.

27 A and B are similar solid cylinders.

base area of A : base area of B = 9 : 25

Complete these ratios.

[2 marks]

curved surface area of A : curved surface area of B = _____ : _____

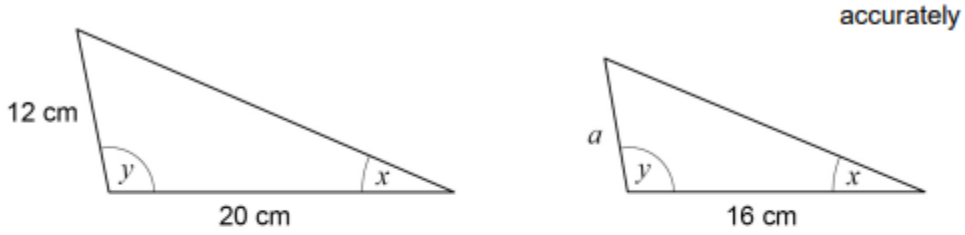
height of A : height of B = _____ : _____

AQA GSCE – Thursday 8 June 2020 – Paper 3 (Calculator) Higher Tier

12.

9 These two triangles are similar.

Not drawn accurately



Work out the value of a.

[2 marks]

Answer _____ cm

AQA GSCE – Thursday 6 June 2019 – Paper 2 (Calculator) Higher Tier

13.

23 A and B are similar cuboids.

surface area of A : surface area of B = 16 : 25

Work out volume of A : volume of B

Circle your answer.

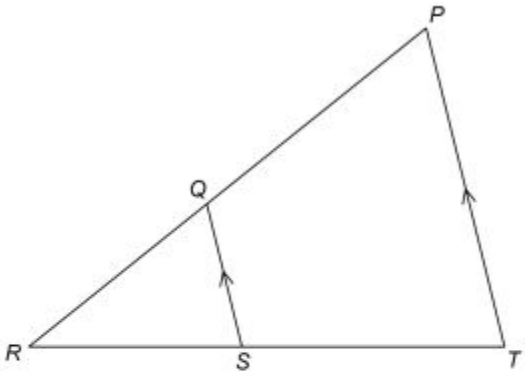
[1 mark]

4 : 5 16 : 25 64 : 125 256 : 625

AQA GSCE – Wednesday 25 May 2017 – Paper 1 (Non - Calculator) Higher Tier

14.

22 *PRT* and *QRS* are similar triangles.



Not drawn accurately

Which of these is equivalent to $\frac{QR}{PR}$?

Circle your answer.

[1 mark]

$\frac{RS}{ST}$ $\frac{QS}{PT}$

$\frac{PT}{QS}$ $\frac{RT}{RS}$

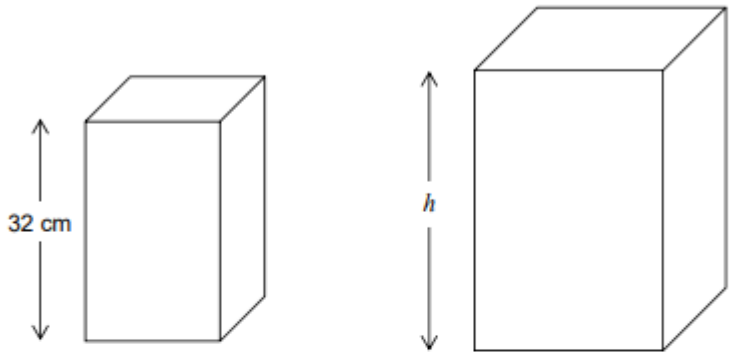
AQA GSCE – Sample Paper 2 (Calculator) Higher Tier

15.

26 Two boxes are made with card.

The boxes are similar cuboids.

The smaller box has height 32 cm



It takes 44% more card to make the larger box.

Work out the height, h, of the larger box.

[4 marks]

Answer _____ cm