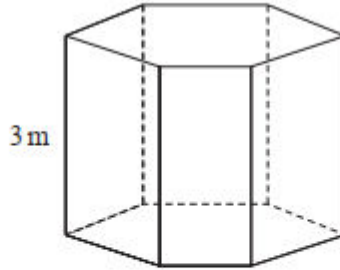**VOLUME OF A PRISM**

Pearson Edexcel – Tuesday 19 May 2020 - Paper 1 (Non-Calculator) Higher Tier

1.

8 The diagram shows a prism placed on a horizontal floor.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

3 m

The prism has height 3 m
The volume of the prism is 18 m³

The pressure on the floor due to the prism is 75 newtons/m²
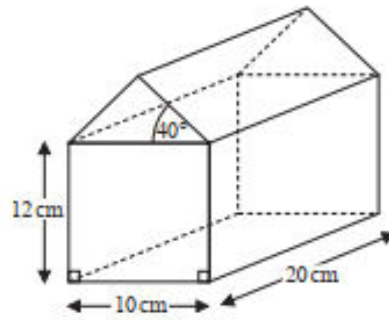
Work out the force exerted by the prism on the floor.

.... newtons

(Total for Question 8 is 3 marks)

Pearson Edexcel – Monday 8 June 2020 - Paper 3 (Calculator) Higher Tier

2.

9   The diagram shows a prism.

The cross section of the prism has exactly one line of symmetry.

Work out the volume of the prism.
Give your answer correct to 3 significant figures.

.... cm²

(Total for Question 9 is 5 marks)

Pearson Edexcel - Thursday 26 May 2016 - Paper 1 (Non-Calculator) Higher Tier

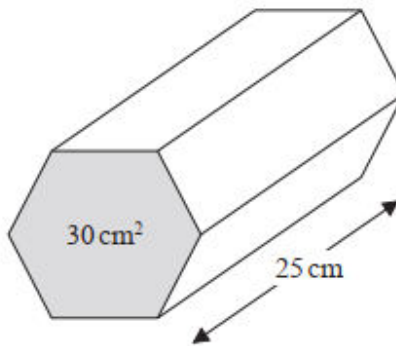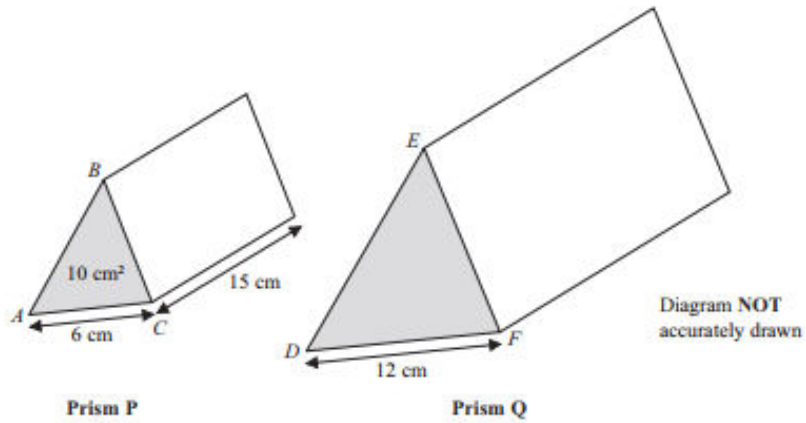**3.**

1   The diagram shows a prism.

Diagram **NOT**
accurately drawn

30 cm²

25 cm

The area of the cross section of the prism is 30 cm².
The length of the prism is 25 cm.

Work out the volume of the prism.

....

(Total for Question 1 is 3 marks)

Pearson Edexcel - Tuesday 11 June 2013 - Paper 1 (Non-Calculator) Higher Tier

4.

22 P and Q are two triangular prisms that are mathematically similar.

Diagram **NOT** accurately drawn

Prism P

Prism Q

Prism **P** has triangle *ABC* as its cross section.
Prism **Q** has triangle *DEF* as its cross section.

$AC = 6$ cm
$DF = 12$ cm

The area of the cross section of prism **P** is 10 cm².
The length of prism **P** is 15 cm.

Work out the volume of prism **Q**.

....

(Total for Question 22 is 4 marks)

Pearson Edexcel - Monday 4 March 2013 - Paper 2 (Calculator) Higher Tier

5.

9   Here is a solid prism.

Diagram **NOT**
accurately drawn

5 cm

7 cm

4 cm

20 cm

11 cm

Work out the volume of the prism.

.... cm³

(Total for Question 9 is 3 marks)

Pearson Edexcel - Tuesday 6 November 2012 - Paper 1 (Non-Calculator) Higher Tier

6.

9 The diagram shows a prism.

Diagram **NOT** accurately drawn

4 cm

7 cm

2 cm

10 cm

9 cm

Work out the volume of the prism.

................................cm³

(Total for Question 9 is 3 marks)

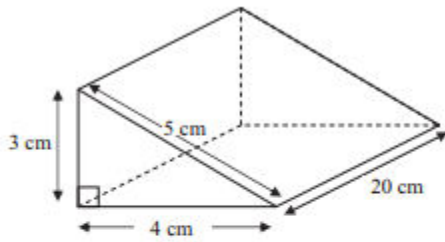**Pearson Edexcel - Monday 7 June 2010 - Paper 3 (Non-Calculator) Higher Tier**
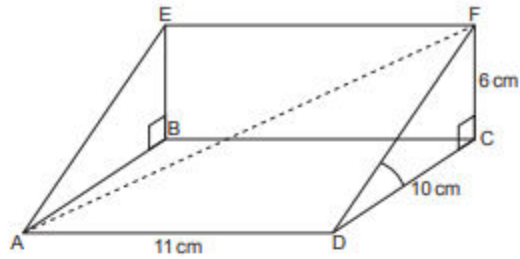
7.

9.

3 cm

5 cm

20 cm

4 cm

Diagram **NOT** accurately drawn

Work out the volume of the triangular prism.

.... cm³

(Total 2 marks)

8.

18 The diagram shows a right-angled triangular prism ABCDEF.

Length AD = 11 cm, length CD = 10 cm and length CF = 6 cm.

(a) Calculate the volume of the prism.

(a) .... cm³ **[2]**

(b) Use trigonometry to show that angle FDC = 31°, correct to the nearest degree.   **[2]**
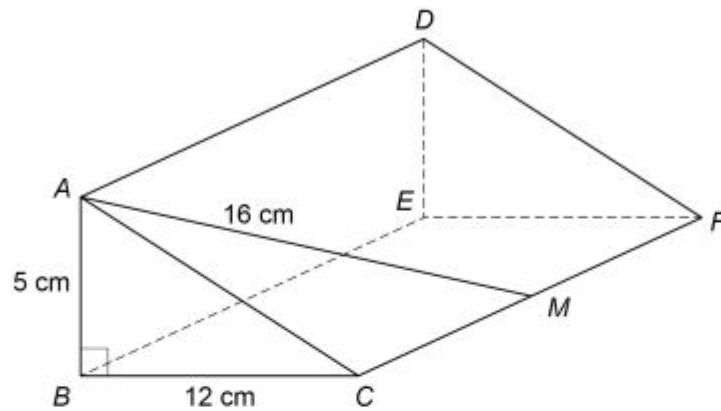
(c) Calculate the exact length of AF.

(c) .... cm **[4]**

9.

23   Right-angled triangle *ABC* is the cross section of a prism.

   AB = 5 cm   *BC* = 12 cm

   M is the midpoint of *CF*.

   AM = 16 cm

Work out the volume of the prism.

[4 marks]

_____

_____

_____

_____

_____

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_____

AQA GSCE – Thursday 8 November 2018 – Paper 2 (Calculator) Higher Tier

10.

14   The cross section of a prism has n sides.

Circle the expression for the number of edges of the prism.

[1 mark]

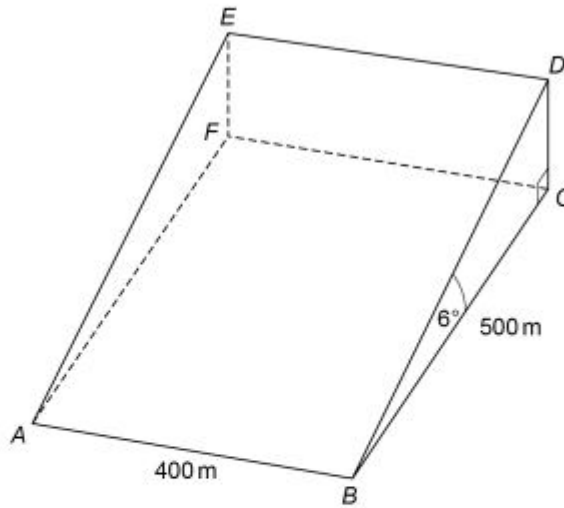2n 3n $n + 2$ $2n + 3$

AQA GSCE – Tuesday 12 June 2018 – Paper 3 (Calculator) Higher Tier

11.

25   *ABCDEF* is a triangular prism which represents part of a hill.
      ABCF is the horizontal rectangular base.
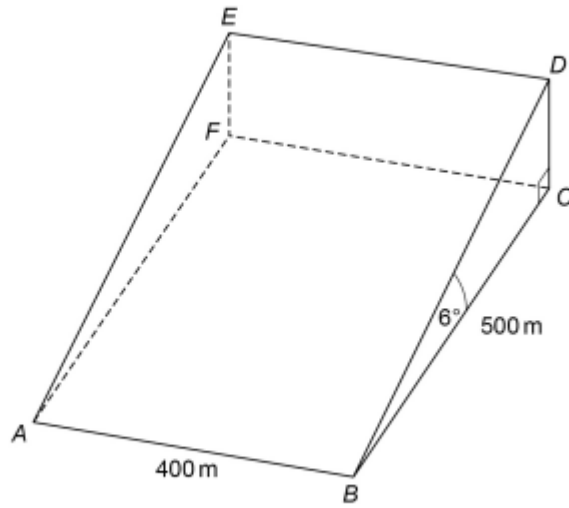   *D* is vertically above *C*.

25 (a)   Work out the height *CD*.

[2 marks]

_____

_____

_____

Answer _____ m

25 (b) Jamil walks in a straight line from *A* to *D*.

Work out the size of angle *DAC*.

You **must** show your working.

[4 marks]

_____

_____

_____

_____

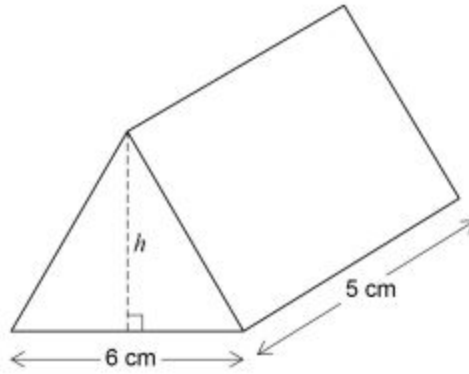_____

_____

_____

_____

_____

Answer _____ degrees

6   The graph shows information about prisms with the same volume.
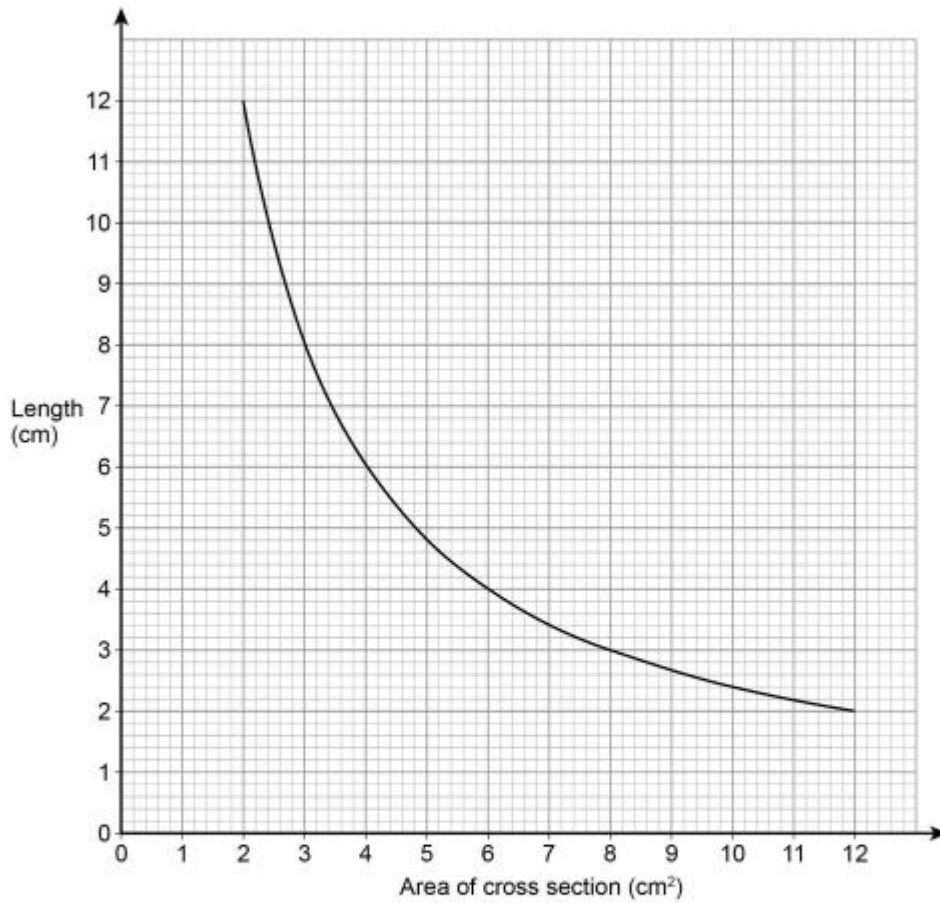
6 (a)   Give **one** example to show the volume is 24 cm^3

[1 mark]

_____

_____

_____

6 (b)   The diagram shows a prism with volume 24 cm^3

The height of the triangular cross section is h.

Work out the height, h.

[3 marks]
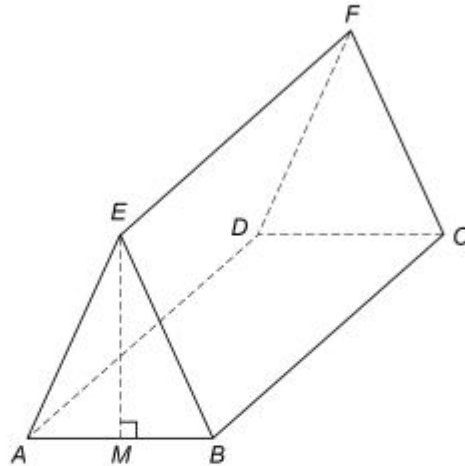
_____

_____

_____

_____

Answer _____ cm

25   Rectangle *ABCD* is the horizontal base of a triangular prism *ABCDEF*.

AE = BE

E is vertically above *M*, the midpoint of *AB*.

AB = 16 cm   *AE* = 17 cm   *BC* = 30 cm

25 (a)   Show that *EM* = 15 cm

[2 marks]

_____

_____

_____

_____

25 (b)   Work out the size of angle *ECM*.

[4 marks]

Answer _____ degrees