MATHS TEACHER HUB
www.MathsTeacherHub.com

Shape properties
(9 – 1) Topic booklet
Foundation

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

Instructions
•Use **black** ink or ball-point pen.
•**Fill in the boxes** at the top of this page with your name, centre number and candidate number.
•Answer **all** questions.
•Answer the questions in the spaces provided
 – *there may be more space than you need*.
•Diagrams are NOT accurately drawn, unless otherwise indicated.
•You must **show all your working out.**
•If the question is a **1F** question you are not allowed to use a calculator.
•If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

Information
•The marks for **each** question are shown in brackets
 – *use this as a guide as to how much time to spend on each question*.

Advice
•Read each question carefully before you start to answer it.
•Keep an eye on the time.
•Try to answer every question.
•Check your answers if you have time at the end.

Answer ALL questions
Write your answers in the space provided.
You must write down all the stages in your working.

4 Here is a square-based pyramid.
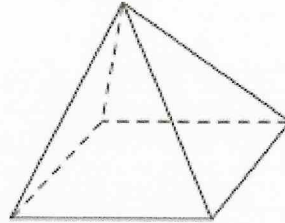
(i) How many faces does the pyramid have?

5

(ii) How many edges does the pyramid have?

8

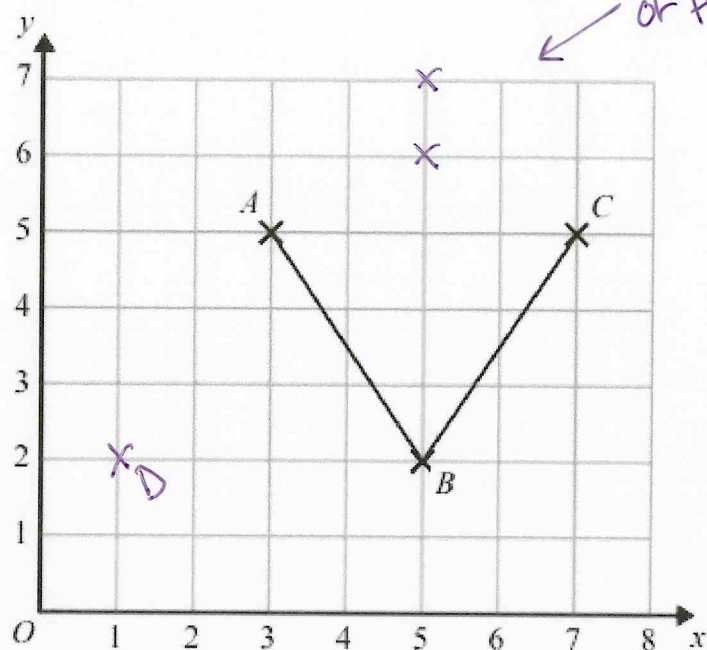Specimen 2 – Paper 1F   (Total for Question 4 is 2 marks)

4 On the grid, draw a parallelogram.

Specimen 2 – Paper 3F   (Total for Question 4 is 1 mark)

4   Here is a grid showing the points A, B and C.

E can be either of these
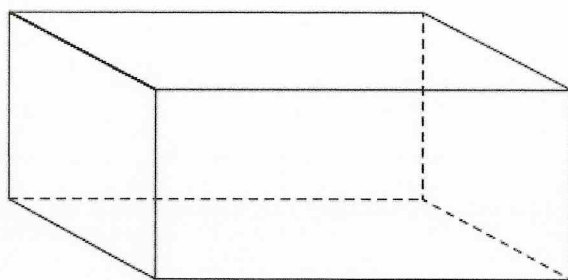

(a) Write down the coordinates of the point A.

3,5

(1)

(b) On the grid, mark with a cross (×) the point (1, 2).
    Label this point D.

(1)

(c) On the grid, mark with a cross (×) a point E, so that the quadrilateral ABCE is a kite.

(1)

(Total for Question 4 is 3 marks)

5   Here is a 3-D shape.

(a) Write down the name of this 3-D shape.

Cuboid

(1)

(b) Write down the number of edges of this 3-D shape.

12

(1)

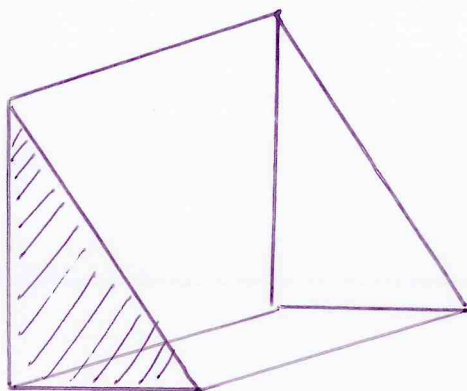**(Total for Question 5 is 2 marks)**
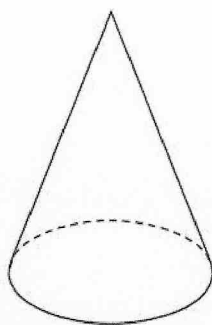
7 Here is a 3-D shape.

(a) Write down the name of this 3-D shape.

Cone

(1)

(b) In the space below, draw a sketch of a triangular prism.

(1)

(Total for Question 7 is 2 marks)
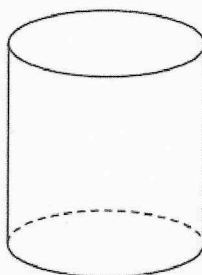
6 (a) Write down the mathematical name of this quadrilateral.
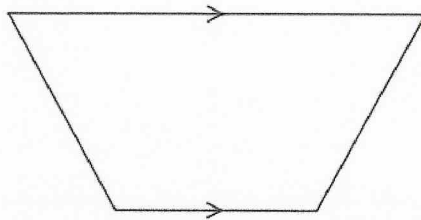
Trapezium
(1)

(b) Write down the mathematical name of this 3-D shape.

Cylinder
(1)

(Total for Question 6 is 2 marks)

7 Here is a triangle.
   The triangle is accurately drawn.
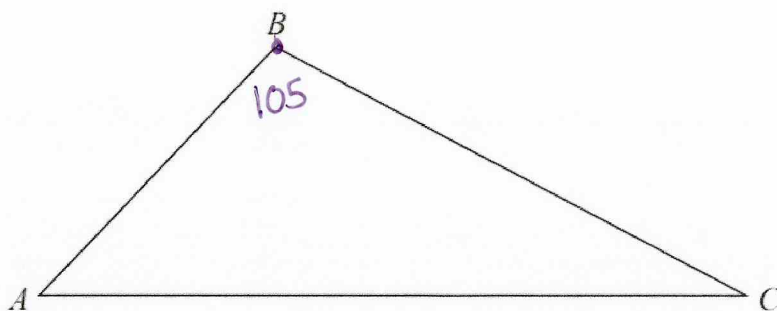
(a) Measure the length of *AC*.

9·4

.... cm
(1)

(b) Measure the size of angle *B*.

105

.... °
(1)

Here is a different triangle.
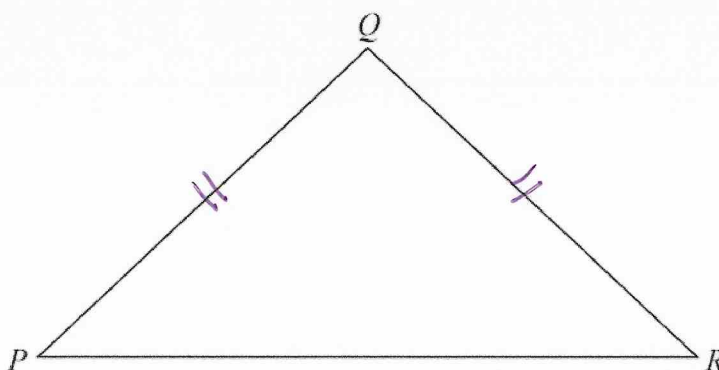
QP = QR

(c) Write down the mathematical name of this triangle.

Isoceles triangle

....
(1)

(Total for Question 7 is 3 marks)

7   Here is polygon *ABCDEF* on a square grid.
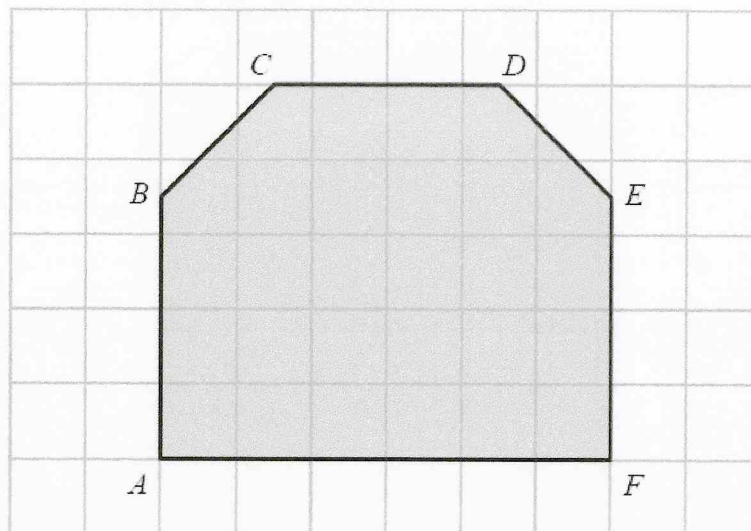
(a) Write down the mathematical name of the polygon.

Hexagon

(1)

(b) Which side of the polygon is parallel to the side *CD*?

AF

(1)

(c) Write down a side of the polygon that is perpendicular to the side *AF*.

BA or FE

(1)

(Total for Question 7 is 3 marks)

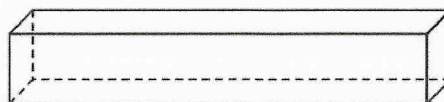**8** A quadrilateral has 4 right angles and 4 sides of equal length.

(a) Write down the mathematical name of this quadrilateral.

Square

(1)

The diagram shows a solid shape.

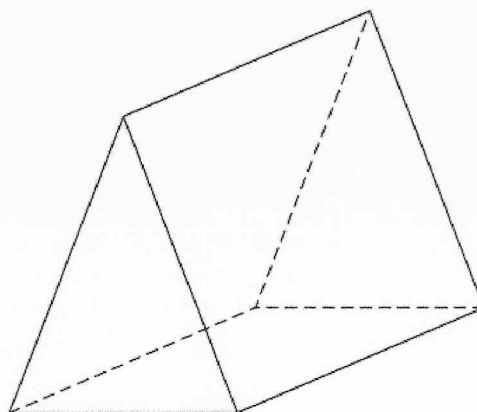

(b) Write down the mathematical name of this shape.

Cuboid

(1)

(Total for Question 8 is 2 marks)

9 The diagram shows a solid triangular prism.

(a) Write down the number of faces of the prism.

5

(1)

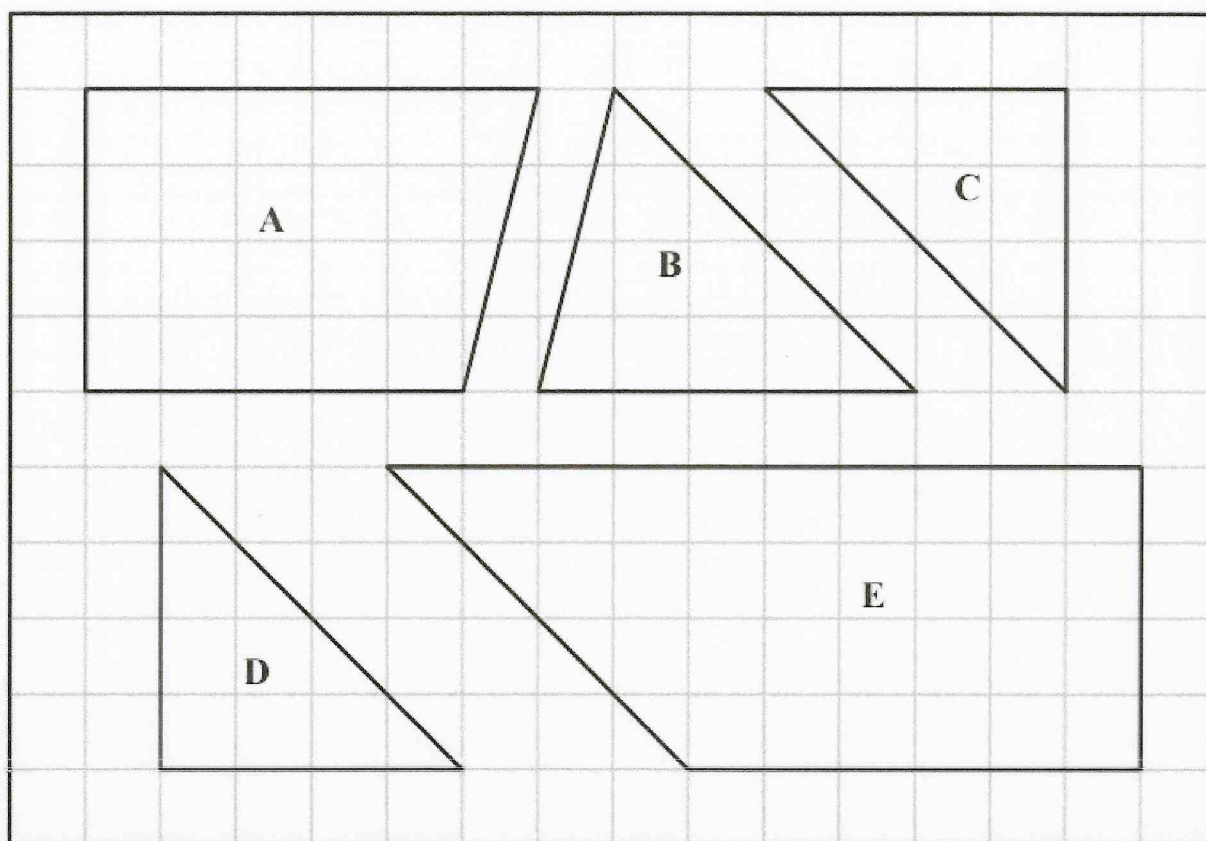(b) Write down the number of edges of the prism.

9

(1)

(Total for Question 9 is 2 marks)

9   The diagram shows five shapes on a centimetre grid.
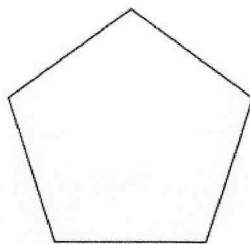

(a) Write down the name of shape **E**.

Trapezium

(1)

Two of the shapes are congruent.

(b) Write down the letters of these two shapes.

C and D

(1)

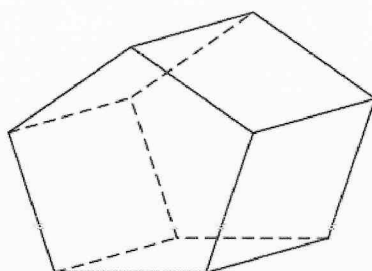**(Total for Question 9 is 2 marks)**

10 Here is a polygon.

(a) Write down the mathematical name of this polygon.

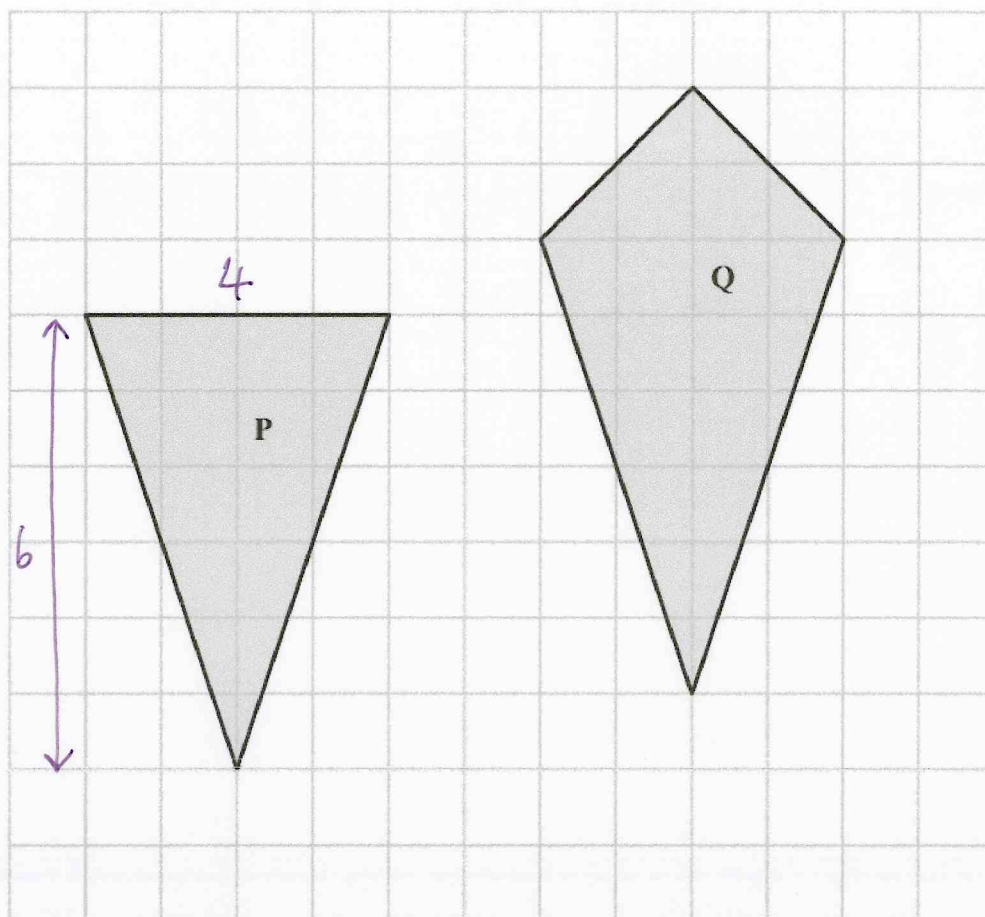Pentagon

(1)

Here is a prism.

$15 \times 7.5 = 112.5$

112.5 .... cm

(2)

(Total for Question 10 is 3 marks)

10 The diagram shows two shapes drawn on a centimetre grid.

(a) Find the area of shape **P**.
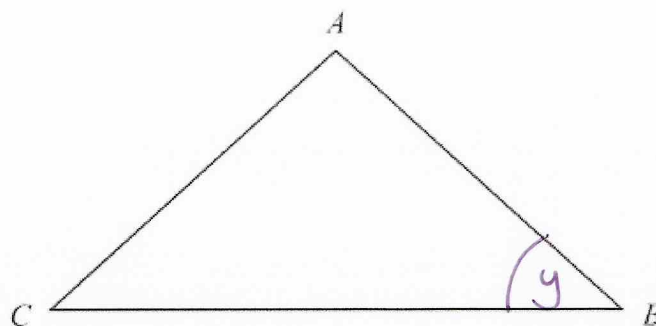
$$\frac{4 \times 6}{2} = \frac{24}{2}$$

12 cm²

....
(2)

(b) Write down the mathematical name of quadrilateral **Q**.

kite

....
(1)

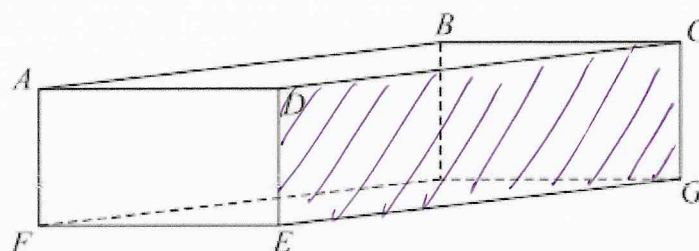**(Total for Question 10 is 3 marks)**

14 Here is a triangle *ABC*.

(a) Mark, with the letter *y*, the angle *CBA*.

(1)

Here is a cuboid.

Some of the vertices are labelled.
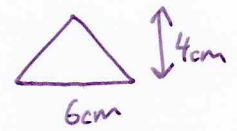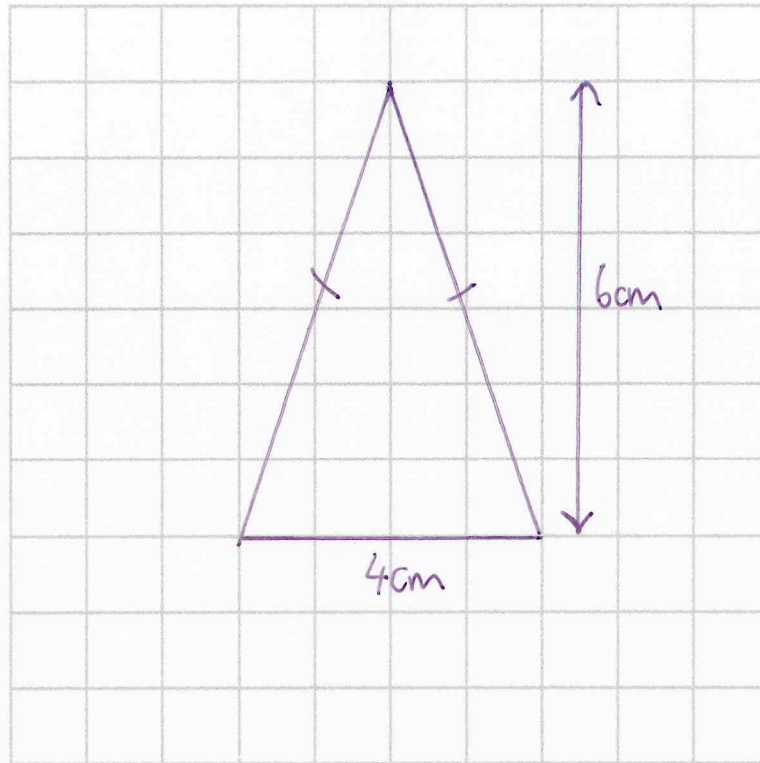
(b) Shade in the face *CDEG*.

(1)

(c) How many edges has a cuboid?

12

(1)

(Total for Question 14 is 3 marks)

16 On the centimetre grid, draw an isosceles triangle with an area of 12 cm²

6cm

4cm

4cm

6cm

(Total for Question 16 is 2 marks)