Name: _____

GCSE (1 – 9)

Angles in Polygons

Instructions

• Use **black** ink or ball-point pen.
• 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.**

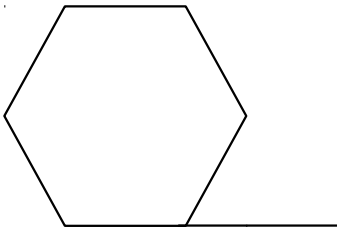
Information

• 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

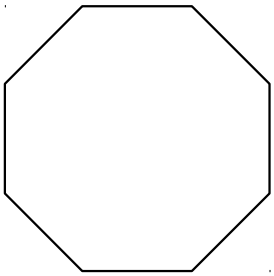
1 Work out the size of an exterior angle of a regular hexagon.



…….°

(Total for question 1 is 2 marks)

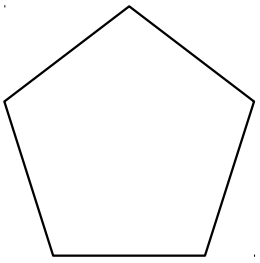
2 Work out the size of each interior angle in a regular octagon.



…….°

(Total for question 2 is 2 marks)

3 Work out the size of each interior angle in a regular pentagon



…….°

(Total for question 3 is 2 marks)

4 The size of each exterior angle in a regular polygon is 20°.
Work out how many sides the polygon has.

….....…

(Total for question 4 is 2 marks)

5 The size of each exterior angle in a regular polygon is 18°.
Work out how many sides the polygon has.

….....…

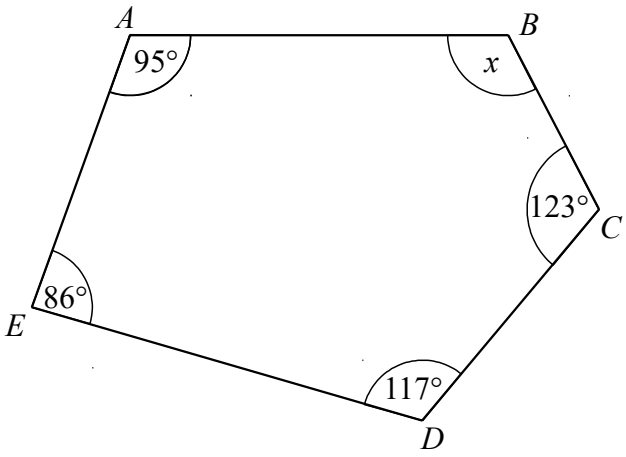
(Total for question 5 is 2 marks)

6 The size of each interior angle in a regular polygon is 165°.
Work out how many sides the polygon has.

….....…

(Total for question 6 is 2 marks)

7



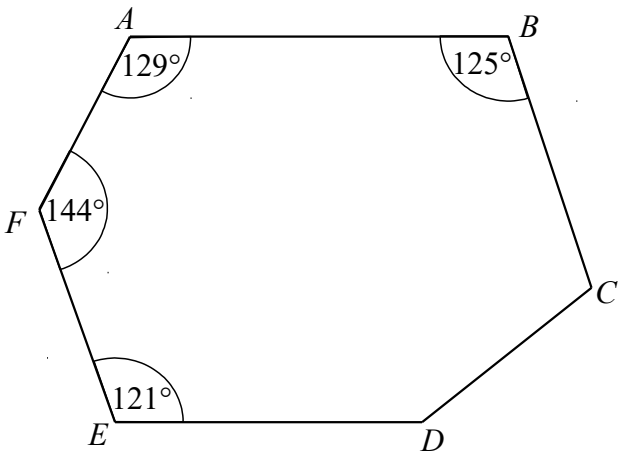
ABCDE is a pentagon.

Work out the size of angle *ABC*.

…….°

(Total for question 7 is 2 marks)

8



ABCDEF is a hexagon.

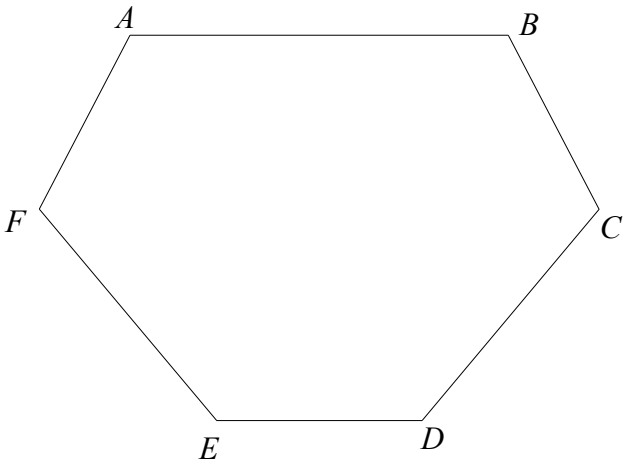
Angle *CDE* = 2 × Angle *BCD*

Work out the size of angle *CDE*.

…….°

(Total for question 8 is 3 marks)

9



ABCDEF is a hexagon.

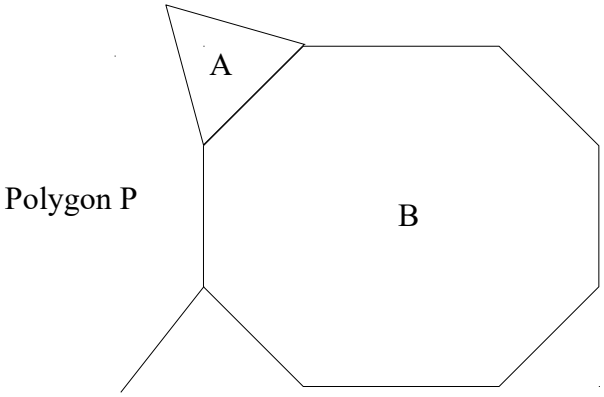
Angle *BAF* = Angle *ABC* = Angle *AFE* = Angle *BCD*.
Angle *DEF* = Angle *CDE* = 130°

Work out the size of angle *BAF*.
You must show all your working.

…….....……°

(Total for question 9 is 3 marks)

10



Shape A is a regular triangle. Shape B is a regular octagon.

Another regular polygon, P, is shown on the diagram.

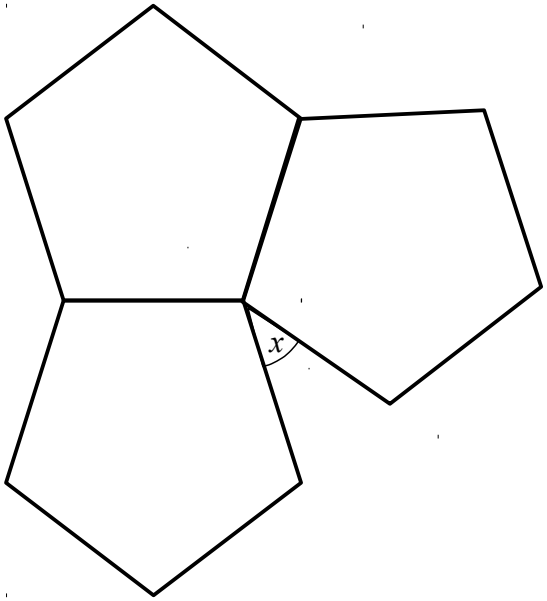
How many sides does polygon P have?

You must show your working.

….....

(Total for question 10 is 4 marks)

11



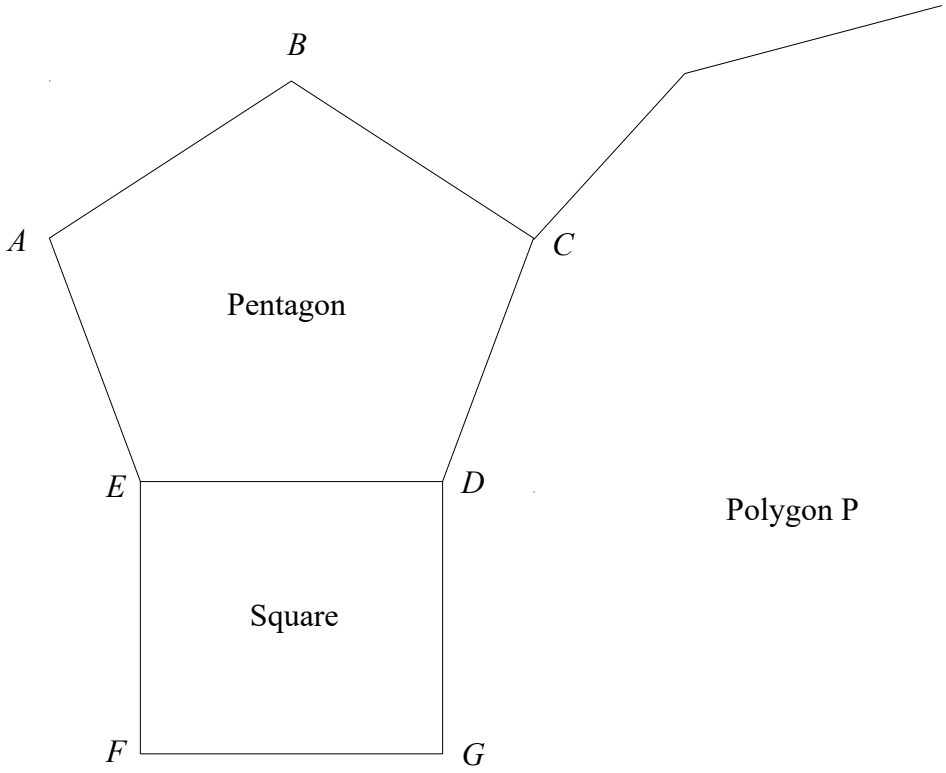
The diagram shows three regular pentagons meeting at a point.

Work out the size of the angle marked x.
You must show all your working.

…….....……°

(Total for question 11 is 3 marks)

12



Polygon P

The diagram shows a regular pentagon, ABCDE, and a square, EDFG.

The lines CD and DG are both sides of another regular polgon, P.

How many sides does polygon P have?

You must show how you got your answer.

….....

(Total for question 12 is 4 marks)