

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.**

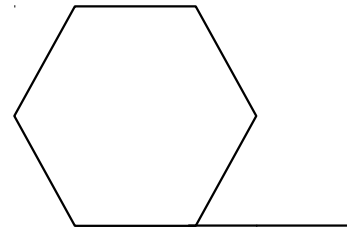
Information

- 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

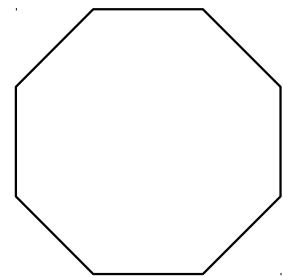
1 Work out the size of an exterior angle of a regular hexagon.



.....°

(Total for question 1 is 2 marks)

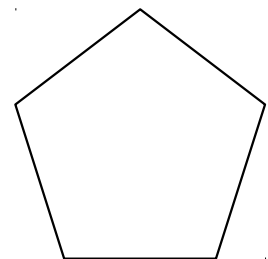
2 Work out the size of each interior angle in a regular octagon.



.....°

(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.

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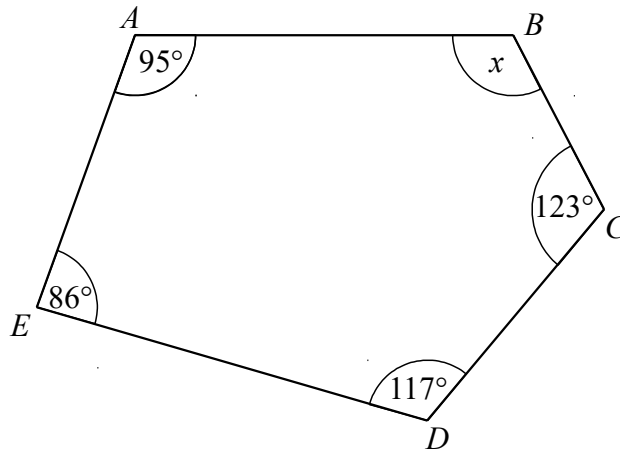
(Total for question 5 is 2 marks)

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

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(Total for question 6 is 2 marks)

7



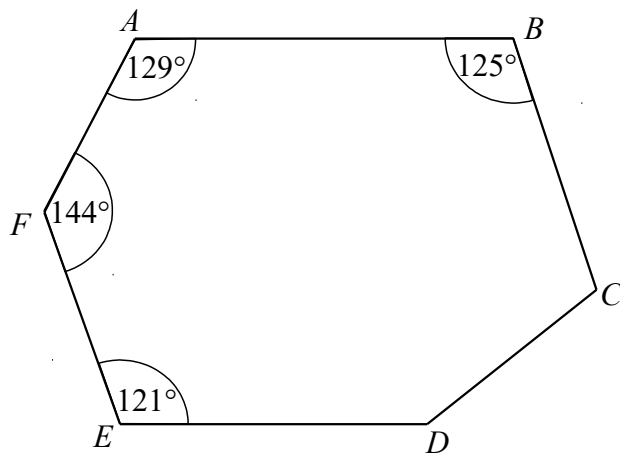
$ABCDE$ is a pentagon.

Work out the size of angle BAF .

.....°

(Total for question 7 is 2 marks)

8



$ABCDEF$ is a hexagon.

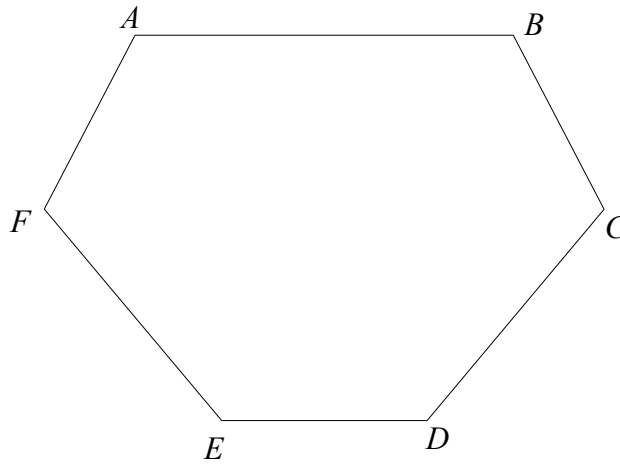
Angle $CDE = 2 \times$ Angle BCD

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 $CDE = 130^\circ$

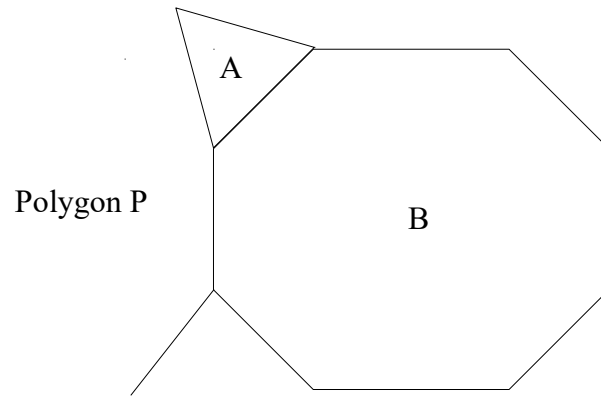
Work out the size of angle BAF .

You must show all your working.

.....^o

(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.

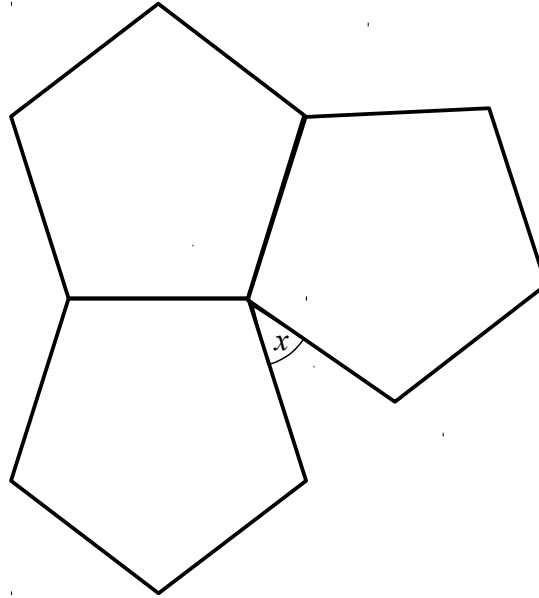
How many sides does polygon P have?

You must show your working.

.....

(Total for question 10 is 4 marks)

11

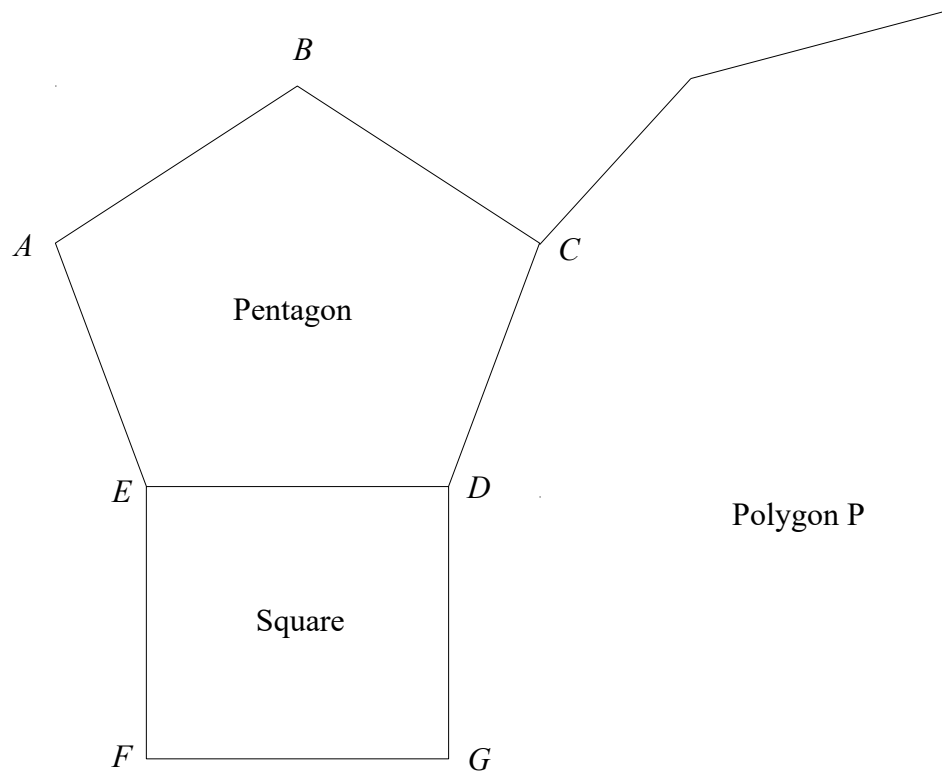


The diagram shows three regular pentagons meeting at a point.

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

.....°

(Total for question 11 is 3 marks)



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

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

How many sides does polygon P have?

You must show how you got your answer.