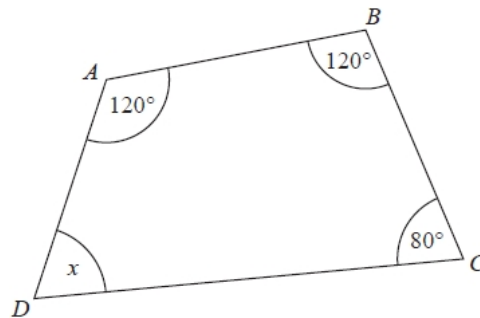


## Angles in Polygons Past Paper Questions



Q1.

$ABCD$  is a quadrilateral.



(a) (i) Work out the size of angle  $x$ .

.....°

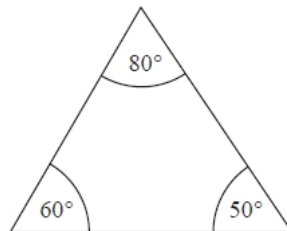
(1)

(ii) Give a reason for your answer.

.....  
.....  
.....

(1)

The diagram below shows a triangle.



The diagram is wrong.

(b) Explain why.

.....  
.....  
.....

(1)

(Total for question = 3 marks)



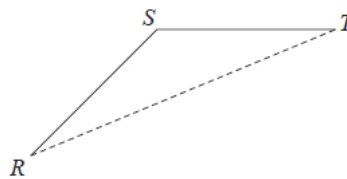
**Q2.**

Each exterior angle of a regular polygon is  $15^\circ$   
Work out the number of sides of the polygon.

.....

**(Total for question = 2 marks)**

**Q3.**



*RS* and *ST* are 2 sides of a regular 12-sided polygon.  
*RT* is a diagonal of the polygon.  
Work out the size of angle *STR*.  
You must show your working.

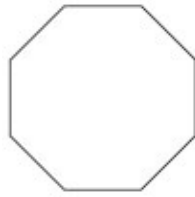
.....°

**(Total for question = 3 marks)**



Q4.

Here is a polygon.



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

.....

(1)

(b) In the space below, draw a pentagon.

(1)

Here is a heptagon.

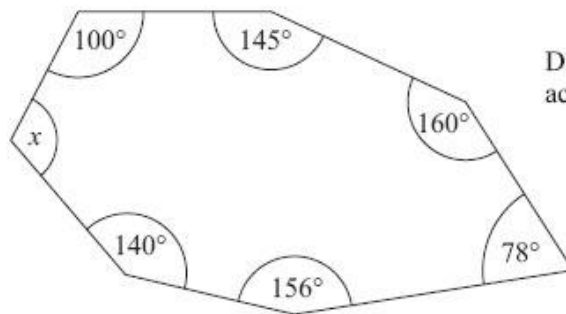


Diagram NOT accurately drawn

All the angles of a heptagon add up to  $900^\circ$

(c) Work out the size of the angle marked  $x$ .

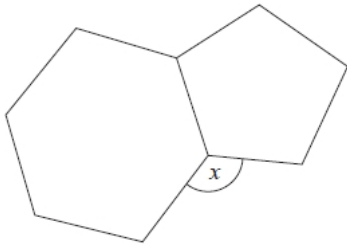
.....

(3)

(Total for Question is 5 marks)



Q5.



Here is a regular hexagon and a regular pentagon.

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

..... °

(Total for question = 3 marks)

Q6.

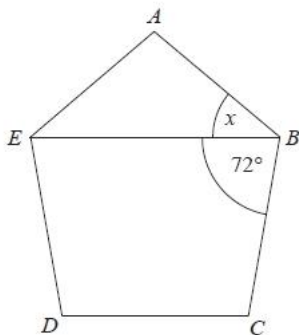


Diagram NOT accurately drawn

$ABCDE$  is a regular polygon.

$EB$  is a straight line.

Angle  $EBC = 72^\circ$ .

Work out the size of the angle marked  $x$ .

..... °

(Total for question = 3 marks)



**Q7.**

The diagram shows 3 sides of a regular polygon.

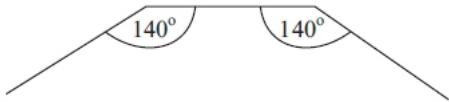


Diagram **NOT** accurately drawn

Each interior angle of the regular polygon is  $140^\circ$ .

Work out the number of sides of the regular polygon.

.....

(Total for Question is 3 marks)

**Q8.**

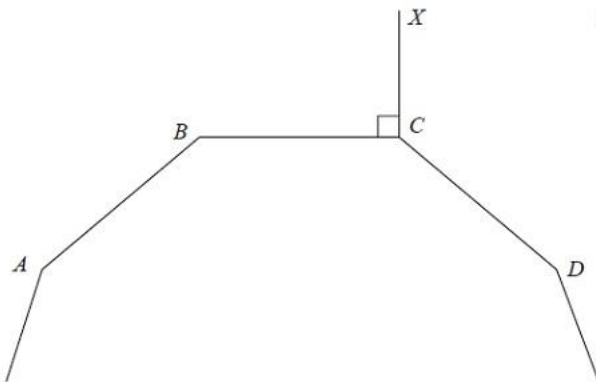


Diagram **NOT** accurately drawn

$A$ ,  $B$ ,  $C$  and  $D$  are four vertices of a regular 10-sided polygon.

Angle  $BCX = 90^\circ$ .

Work out the size of angle  $DCX$ .

.....<sup>o</sup>

(Total for Question is 3 marks)



**Q9.**

The interior angle of a regular polygon is  $160^\circ$ .

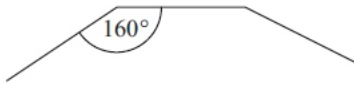


Diagram **NOT** accurately drawn

(i) Write down the size of an exterior angle of the polygon.

..... $^\circ$

(ii) Work out the number of sides of the polygon.

.....

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

**Q10.**

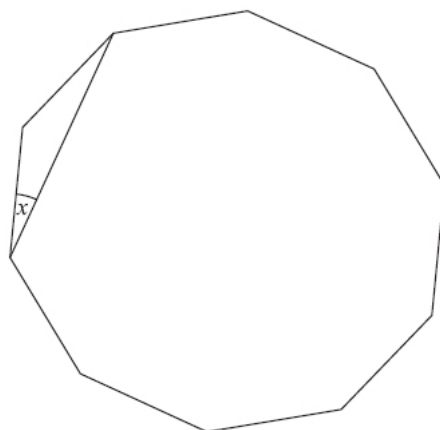


Diagram **NOT** accurately drawn

The diagram shows a regular decagon.  
Work out the size of angle  $x$ .

.....

**(Total for Question is 4 marks)**



**Q11.**

$ABCDEFGHI$  is a regular 9-sided polygon.

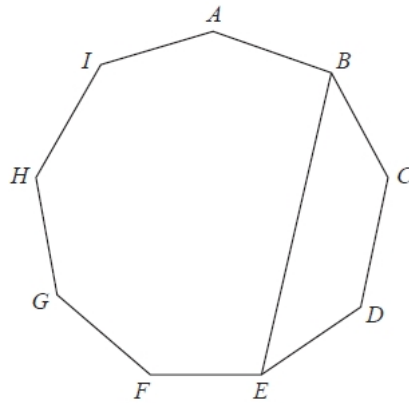


Diagram **NOT**  
accurately drawn

The vertices  $B$  and  $E$  are joined with a straight line.

Work out the size of angle  $BEF$ .

You must show how you get your answer.

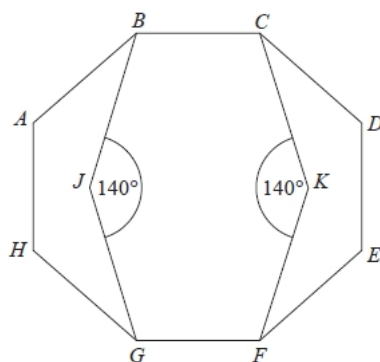
.....°

**(Total for question = 4 marks)**

Q12.



Diagram NOT  
accurately drawn



$ABCDEFGH$  is a regular octagon.

$BCKFGJ$  is a hexagon.

$JK$  is a line of symmetry of the hexagon.

Angle  $BJG = \text{angle } CKF = 140^\circ$

Work out the size of angle  $KFE$ .

You must show all your working.

.....<sup>o</sup>

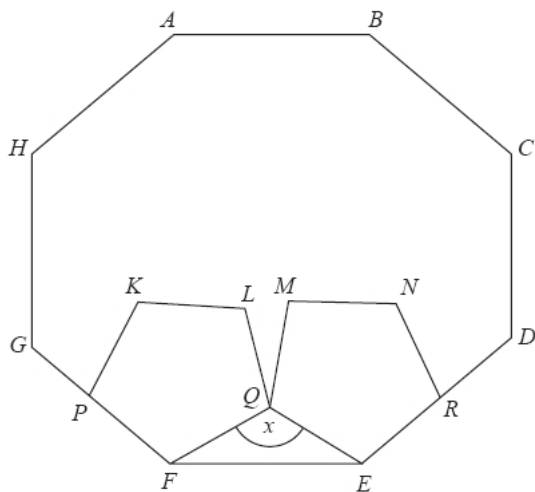
(Total for Question is 4 marks)



Q13.



Diagram NOT  
accurately drawn



$ABCDEFGH$  is a regular octagon.  
 $KLPQ$  and  $MNRQ$  are two identical regular pentagons.

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

.....°

(Total for question = 4 marks)

Q14.

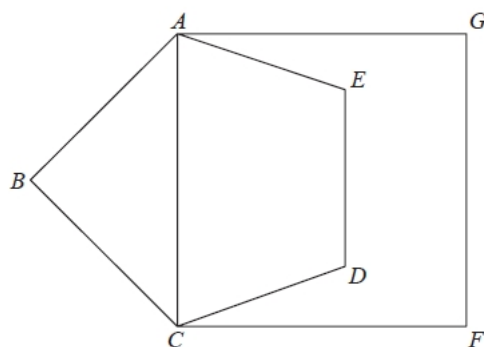


Diagram NOT  
accurately drawn

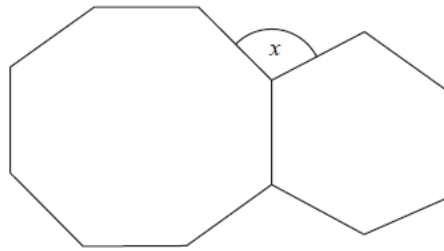
$ABCDE$  is a regular pentagon.  
 $ACFG$  is a square.

Work out the size of angle  $DCF$ .  
You must show all your working.

.....°

(Total for question = 4 marks)

Q15.



The diagram shows a regular octagon and a regular hexagon.

Find the size of the angle marked  $x$

You must show all your working.

$x = \dots\dots\dots^\circ$

**(Total for question = 3 marks)**