



# EXAM PAPERS PRACTICE

GCSE OCR Math J560

Angles in polygons

Question Paper

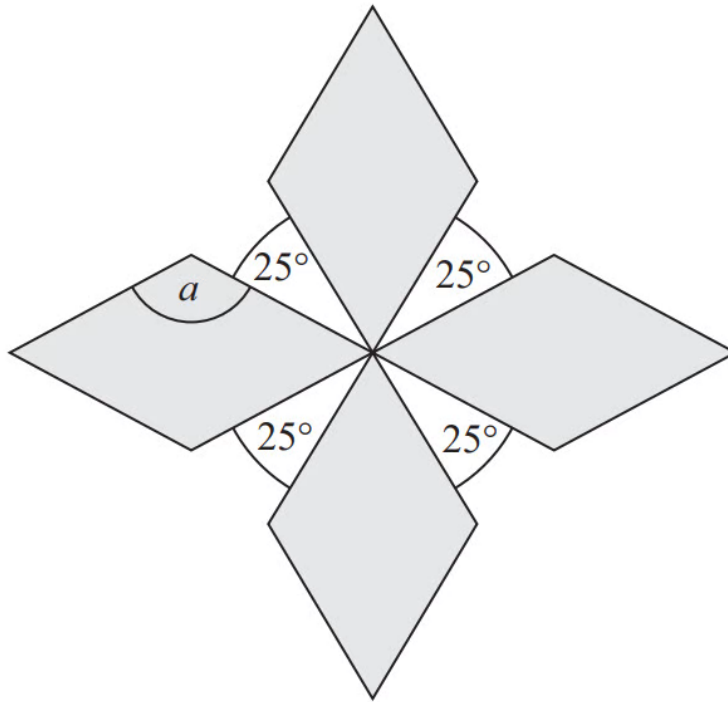
*"We will help you to  
achieve A Star "*



**Question 1**

The diagram shows a pattern using four identical rhombuses.

Diagram **NOT**  
accurately drawn



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

[4 marks]



**Question 2**

$ABCDE$  and  $PQRST$  are regular pentagons.

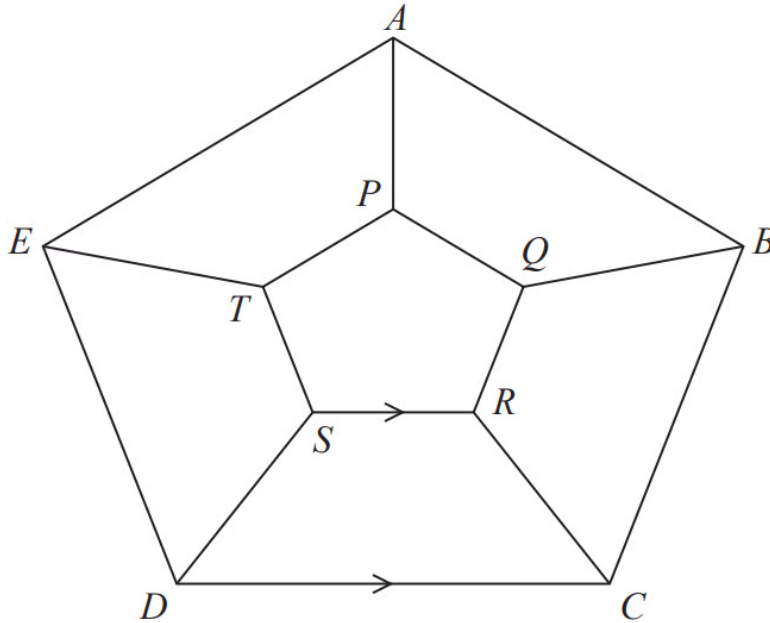


Diagram **NOT** accurately drawn

$SR$  is parallel to  $DC$   
 $AP = BQ = CR = DS = ET$

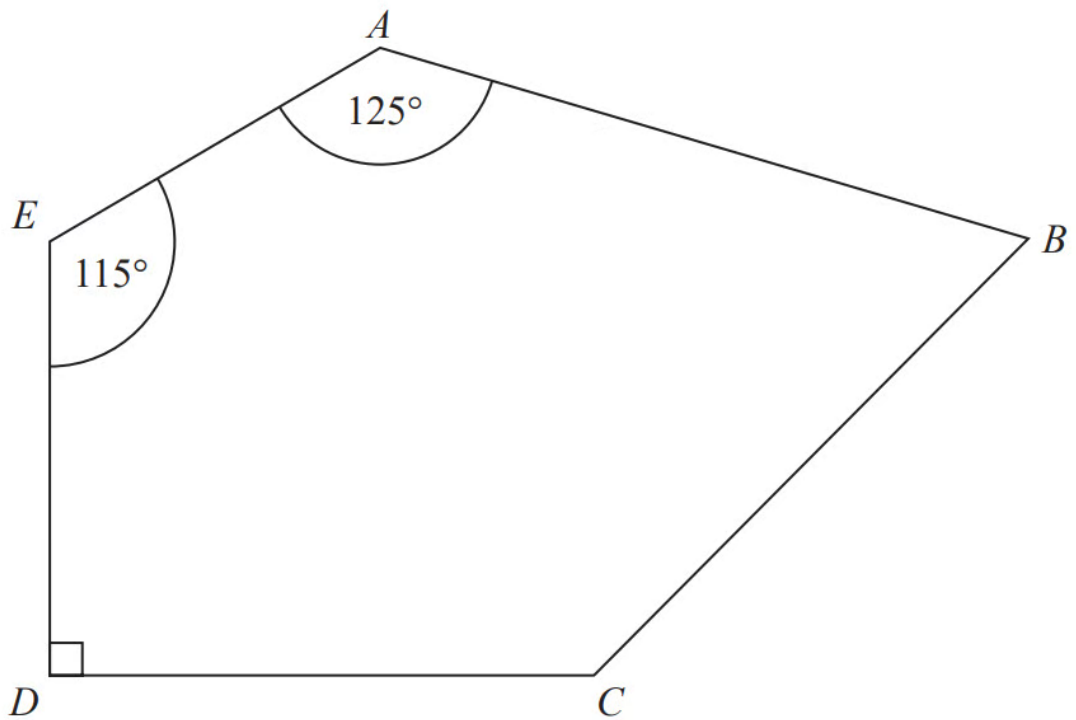
Work out the size of angle  $SRC$ .  
You must show all your working.

[3 marks]



**Question 3**

*ABCDE* is a pentagon.



Angle  $BCD = 2 \times$  angle  $ABC$

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

[5 marks]



**Question 4**

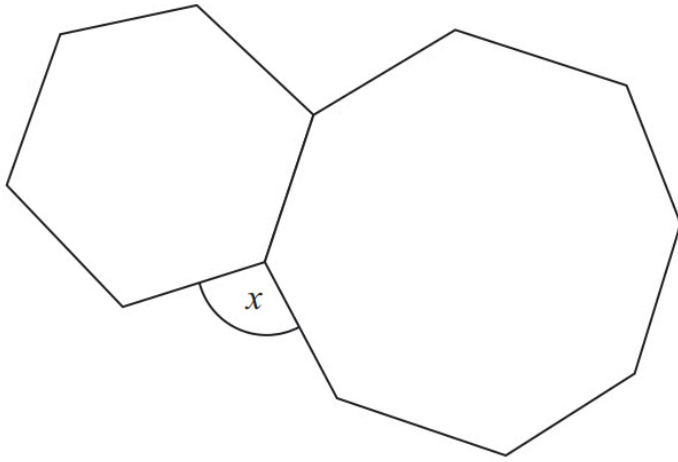


Diagram **NOT**  
accurately drawn

The diagram shows a regular hexagon and a regular octagon.

Calculate the size of the angle marked  $x$ .

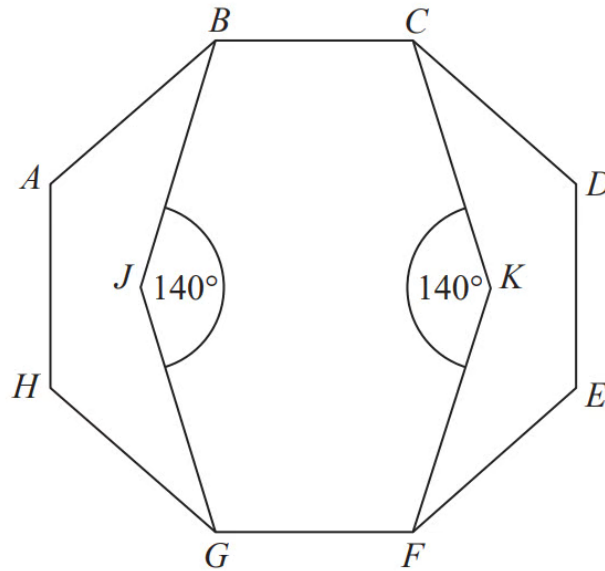
You must show all your working.

**[4 marks]**



**Question 5**

Diagram **NOT**  
accurately drawn



$ABCDEFGH$  is a regular octagon.  
 $BCKFGJ$  is a hexagon.

$JK$  is a line of symmetry of the hexagon.  
Angle  $BJG = \text{angle } CKF = 140^\circ$

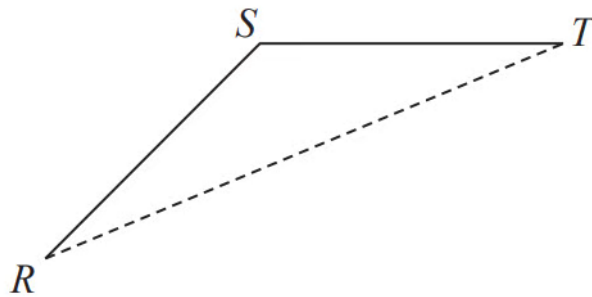
Work out the size of angle  $KFE$ .  
You must show all your working.

o

[4 marks]



**Question 6**



$RS$  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.

**[3 marks]**



**Question 7**

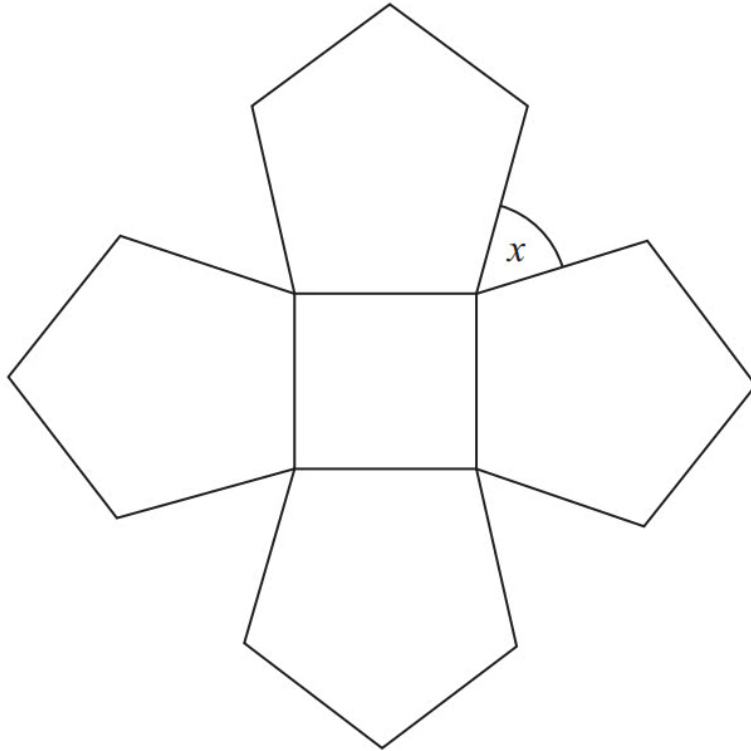


Diagram **NOT**  
accurately drawn

The diagram shows a square and 4 regular pentagons.

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

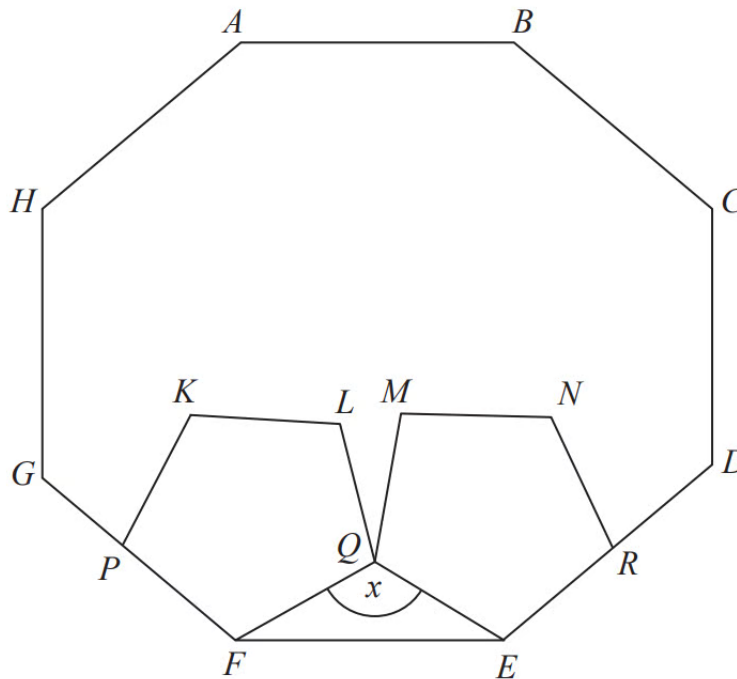
**[3 marks]**





**Question 8**

Diagram **NOT**  
accurately drawn



$ABCDEFGH$  is a regular octagon.  
 $KLQFP$  and  $MNREQ$  are two identical regular pentagons.

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

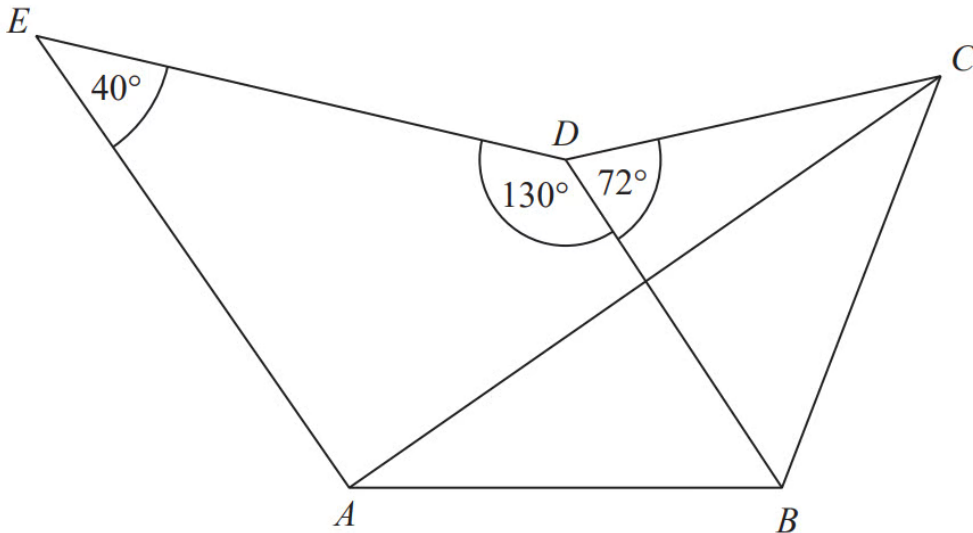
**[4 marks]**



**Question 9**

Here is a pentagon  $ABCDE$ .

Diagram **NOT**  
accurately drawn



$$AB = BC = BD$$

$ABDE$  is a kite.

$$\text{Angle } AED = 40^\circ$$

$$\text{Angle } EDB = 130^\circ$$

$$\text{Angle } BDC = 72^\circ$$

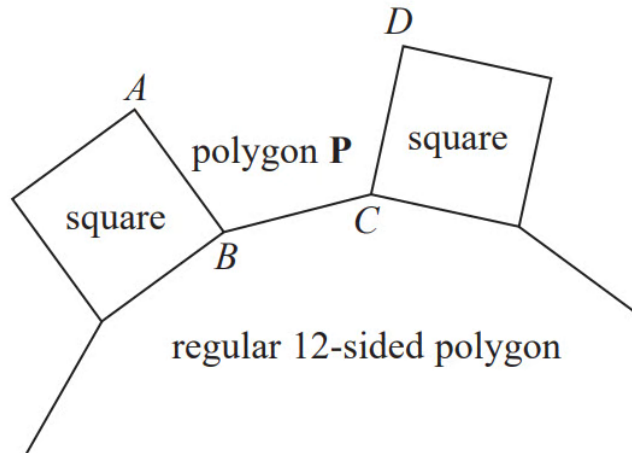
Work out the size of angle  $ACB$ .

[3 marks]



**Question 10**

In the diagram,  $AB$ ,  $BC$  and  $CD$  are three sides of a regular polygon **P**.



Show that polygon **P** is a hexagon.  
You must show your working.

[4 marks]



**Question 11**

The diagram shows part of a pattern made from tiles.

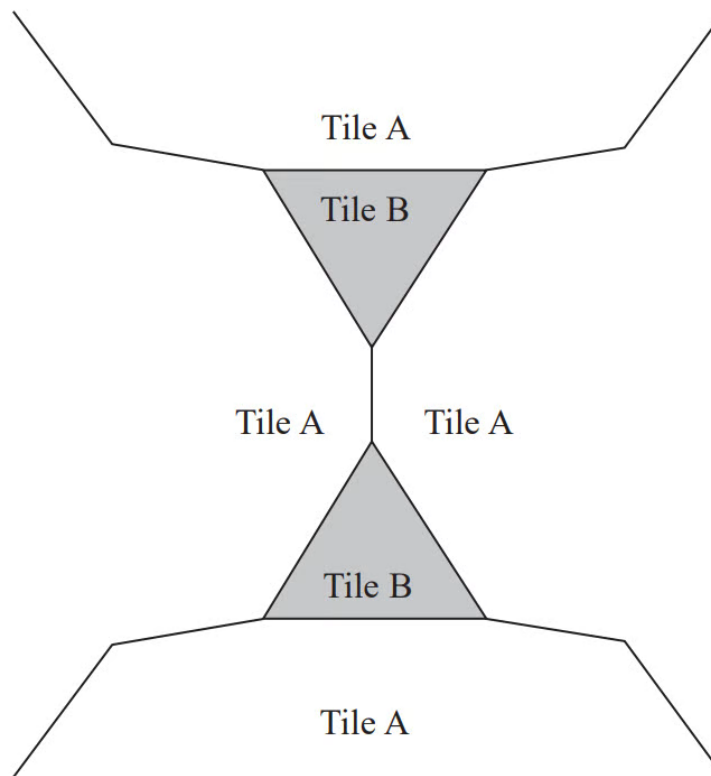


Diagram **NOT** accurately drawn

The pattern is made from two types of tiles, tile A and tile B.

Both tile A and tile B are regular polygons.

Work out the number of sides tile A has.

**[4 marks]**



**Question 12**

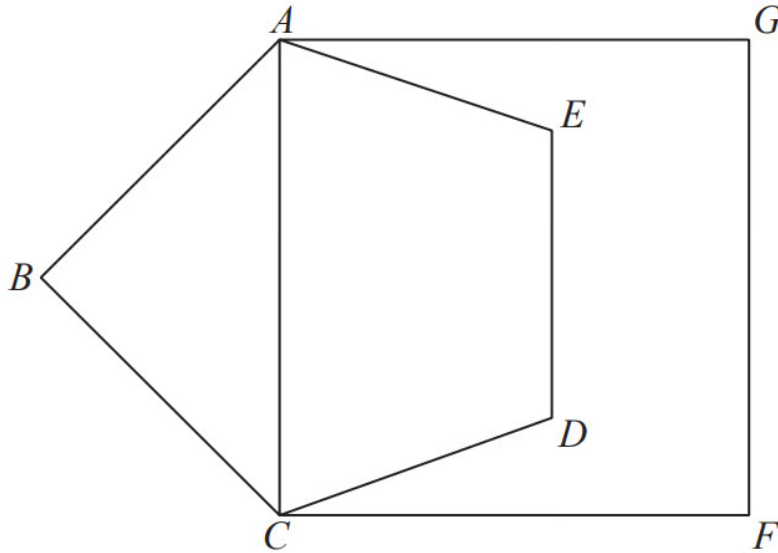


Diagram **NOT**  
accurately drawn

$ABCDE$  is a regular pentagon.

$ACFG$  is a square.

Work out the size of angle  $DCF$ .

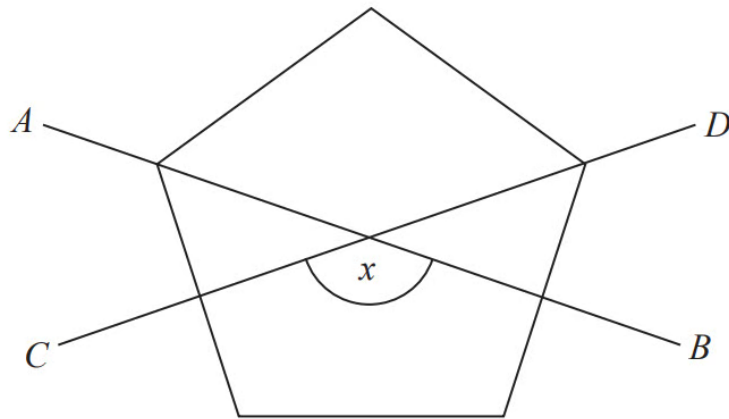
You must show all your working.

[4 marks]



**Question 13**

Diagram **NOT**  
accurately drawn



The diagram shows a regular pentagon.  
 $AB$  and  $CD$  are two of the lines of symmetry of the pentagon.

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

**[4 marks]**



**Question 14**

$ABCDEFGHI$  is a regular 9-sided polygon.

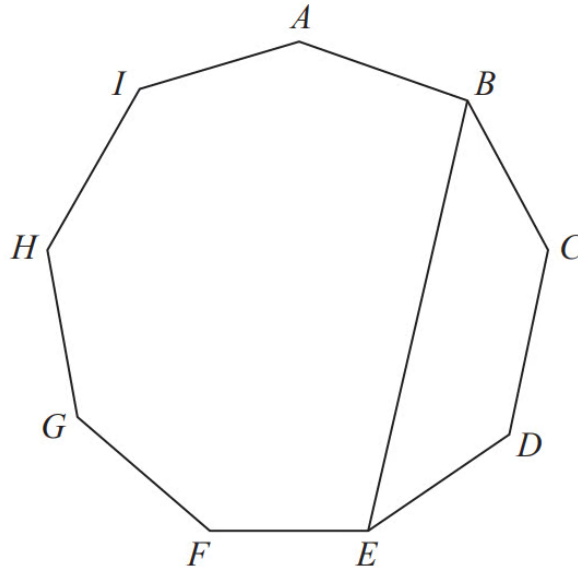


Diagram **NOT**  
accurately drawn

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.

[4 marks]