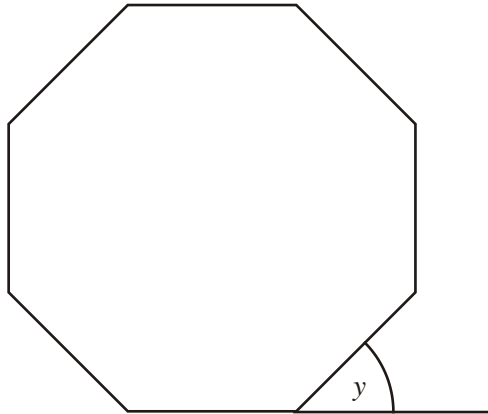


1. The diagram shows a regular octagon.



**Not drawn accurately**

Calculate the size of the exterior angle of the regular octagon, marked  $y$  on the diagram.

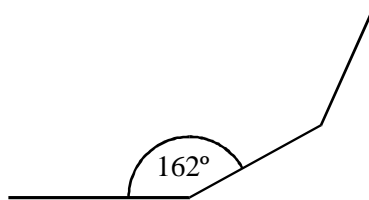
.....  
 .....  
 .....  
 .....

Answer.....

**(Total 2 marks)**

2. The diagram shows part of a regular polygon.

Each interior angle is  $162^\circ$ .



**Not drawn accurately**

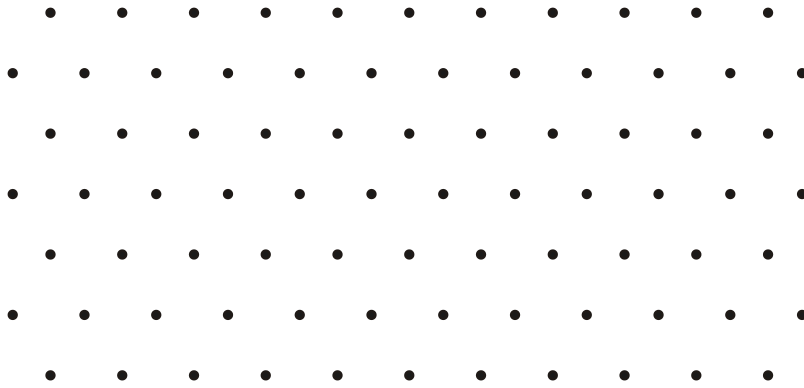
Calculate the number of sides of the polygon.

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

Answer .....

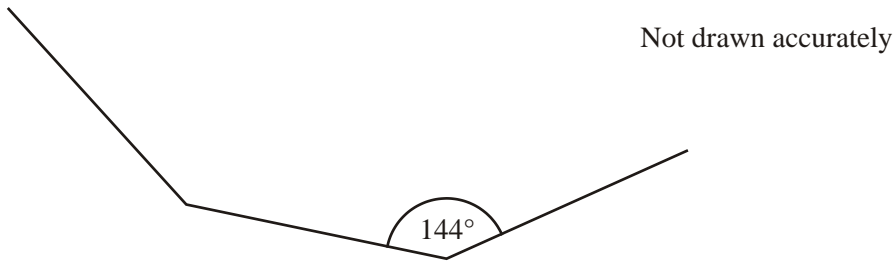
**(Total 3 marks)**

3. (a) On the triangular grid below, show clearly that regular hexagons will tessellate.



(2)

(b) The diagram shows part of a regular polygon. Each interior angle is  $144^\circ$ .



(i) Calculate the size of the exterior angle of the polygon.

.....  
 .....

Answer ..... degrees

(2)

(ii) Calculate the number of sides of the polygon.

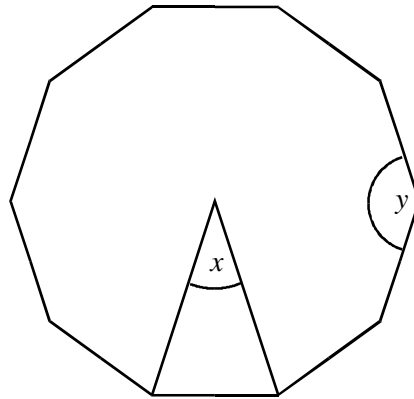
.....  
 .....

Answer .....

(2)

**(Total 6 marks)**

4. The diagram shows a regular decagon.



Not drawn accurately

(a) Work out the angle at the centre of the decagon, marked  $x$  on the diagram.

.....  
 .....

Answer ..... degrees

(2)

(b) Work out the size of the interior angle, marked  $y$  on the diagram.

.....  
 .....

Answer ..... degrees

(2)

(Total 4 marks)

5. (a) A regular polygon has 9 sides.  
 Calculate the size of an interior angle.

.....  
 .....

Answer.....degrees

(2)

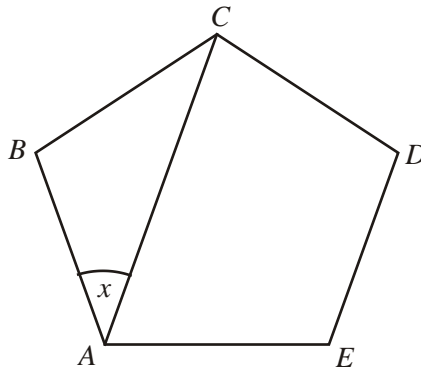
(b) Explain why there is no regular polygon which has an interior angle of  $155^\circ$

.....  
 .....

(3)

(Total 5 marks)

6.  $ABCDE$  is a regular pentagon.



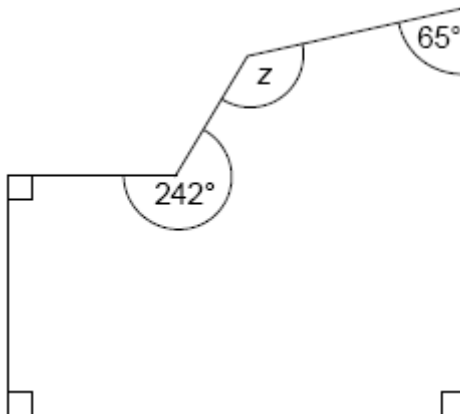
Not drawn accurately

Work out the value of  $x$ .

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

Answer  $x =$  ..... degrees  
**(Total 4 marks)**

7. Josh is tiling a wall.  
 He needs to cut a tile to the shape shown in the diagram.



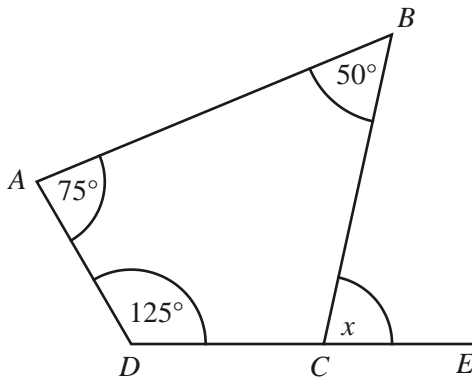
Not to scale

Work out angle  $z$ .

.....°

[4]

8. (a)  $ABCD$  is a quadrilateral.  
The side  $DC$  is extended to  $E$ .



Not drawn accurately

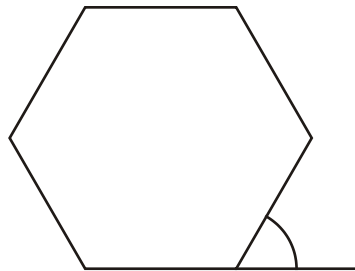
Work out the value of  $x$ .

.....  
 .....

Answer ..... degrees

(3)

- (b) Calculate the size of the exterior angle of a regular hexagon.



Not drawn accurately

.....  
 .....

Answer ..... degrees

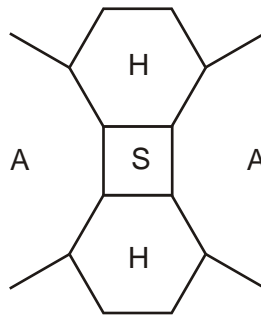
(2)

(Total 5 marks)

9. (a) Prove that the interior angle of a regular hexagon is  $120^\circ$ .

[2]

- (b) The diagram shows part of a tessellation.



Shape S is a square.

Shapes H are regular hexagons.

The tessellation is completed by another regular shape.  
Parts of two of these shapes are shown and labelled A.

- (i) Prove that the interior angle of shape A is  $150^\circ$ .

[3]

- (ii) How many sides has shape A?

.....

[2]

10.

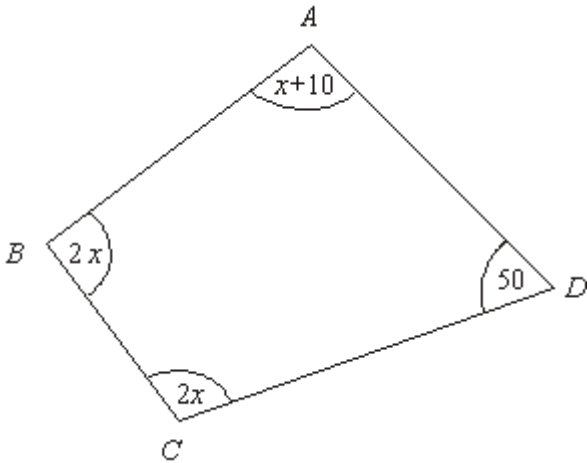


Diagram **NOT** accurately drawn

In this quadrilateral, the sizes of the angles, in degrees, are

- $x + 10$
- $2x$
- $2x$
- $50$

(a) Use this information to write down an equation in terms of  $x$ .

.....

(2)

(b) Work out the value of  $x$ .

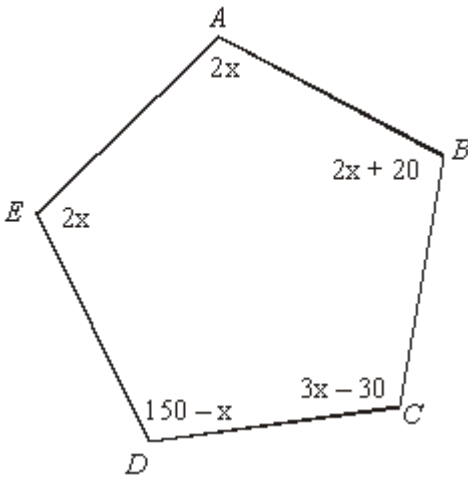
$x = \dots\dots\dots$

(3)

(Total 5 marks)

11. In the diagram all of the angles are in degrees.  
Find the size of angle  $CDE$ .

Diagram NOT  
accurately drawn

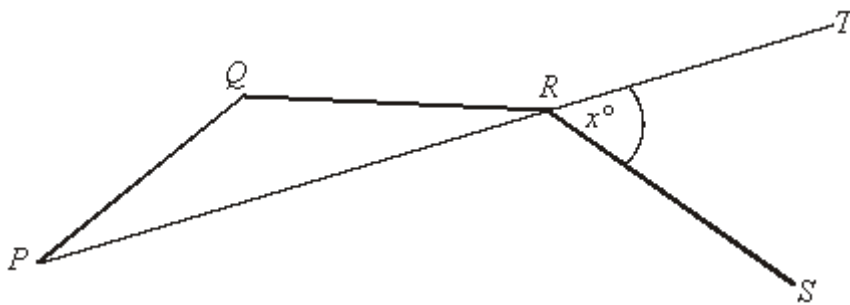


.....

(Total 4 marks)

- 12.

Diagram NOT  
accurately drawn



$PQ$ ,  $QR$  and  $RS$  are 3 sides of a regular decagon.  
 $PRT$  is a straight line.  
Angle  $TRS = x^\circ$

Work out the value of  $x$

$x = \dots\dots\dots$

(Total 5 marks)