

Name:

Exam Style Questions

Tessellations



Corbettmaths

Equipment needed: Pencil, Ruler and Pen

### Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

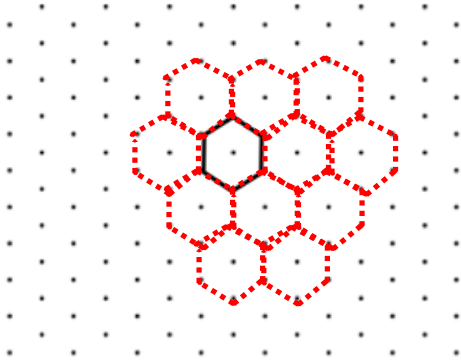
Video 36



Answers and Video Solutions



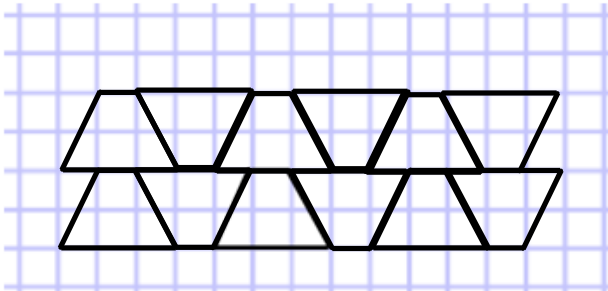
1. A regular hexagon is drawn below.



On the grid above, show how the hexagon tessellates.  
You should draw at least 8 shapes.

(2)

2. A quadrilateral is drawn below.



- (a) What is the name of the quadrilateral?

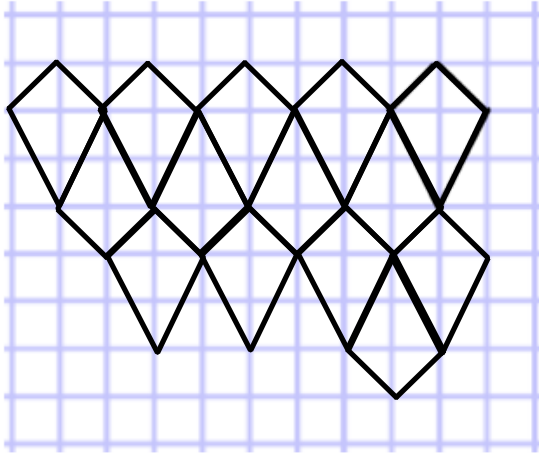
trapezium

(1)

- (b) On the grid above, show how the quadrilateral tessellates.  
You should draw at least 8 shapes.

(2)

3. A quadrilateral is drawn below.



(a) What is the name of the quadrilateral?

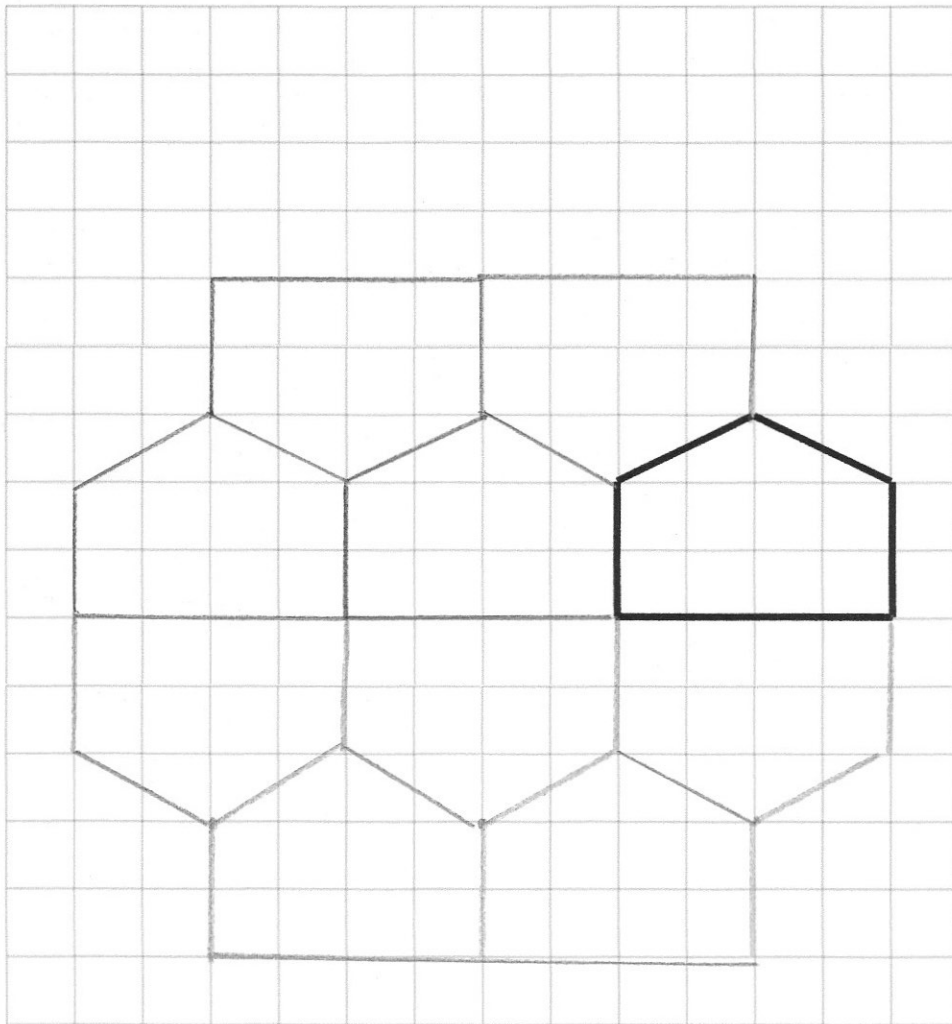
kite

(1)

(b) On the grid above, show how the quadrilateral tessellates.  
You should draw at least 8 shapes.

(2)

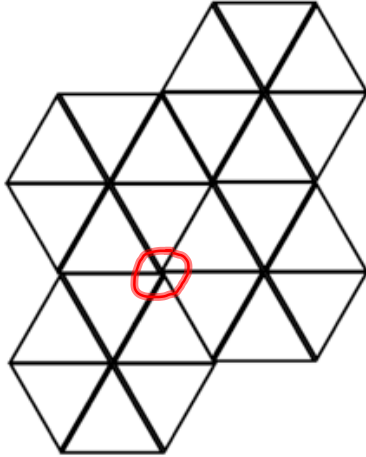
4. A pentagon is drawn on the grid below.



Show how the pentagon will tessellate.  
You should draw at least 6 pentagons.

(2)

5. Here is a tessellating pattern made from equilateral triangles.



- (a) Write down the size of each interior angle in the equilateral triangle.

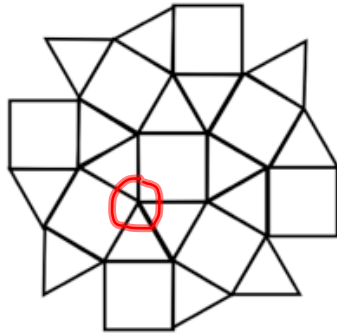
60°  
.....°  
(1)

- (b) Explain why equilateral triangles tessellate.

As each angle is  $60^\circ$ , six angles will fit together at each point to make  $360^\circ$ .

(2)

6. Here is a tessellating pattern made from equilateral triangles and squares.



- (a) Write down the size of each interior angle in the equilateral triangle.

60 .....°  
(1)

- (b) Write down the size of each interior angle in the square.

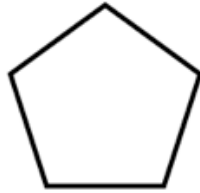
90 .....°  
(1)

- (b) Explain why equilateral triangles and squares tessellate can form a pattern that tessellates.

At each point, three triangles and two squares will fit perfectly together, as  $(3 \times 60) + (2 \times 90) = 360$

(3)

7. Shown is a regular pentagon.



(a) What is the size of each interior angle?

$$540 \div 5 = 108$$

$$\underline{108}^\circ$$

(2)

James says a tessellating pattern can be formed from using only regular pentagons.

Is he correct? Explain your answer.

As each interior angle is  $108^\circ$ , three regular pentagons at a point would be  $324^\circ$  and not leaving sufficient space for a fourth pentagon

(3)

8. Shown is a regular hexagon.



- (a) What is the size of each interior angle?

$$720 \div 6 = 120^\circ$$

$$\dots 120^\circ$$

(2)

Emma says a tessellating pattern can be formed from using only regular hexagons.

Is he correct? Explain your answer.

Yes,

Three regular hexagons can fit together perfectly at each point as  $3 \times 120 = 360$

(3)



9. Circle the shape that tessellates.



regular heptagon

regular octagon

regular hexagon

regular decagon

(1)