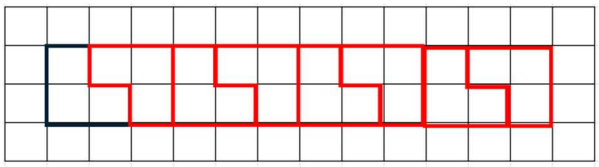
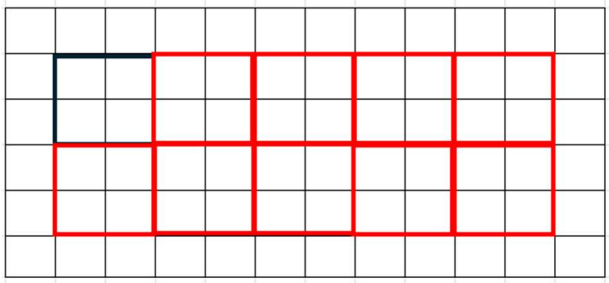
# TESSELLATIONS

**Task 1**

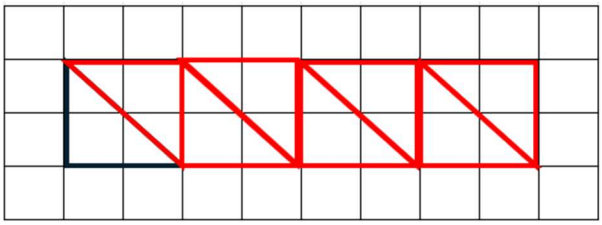
1) **Draw seven more shapes to show the shape will tessellate.**



2) **Draw nine more shapes to show the shape will tessellate.**



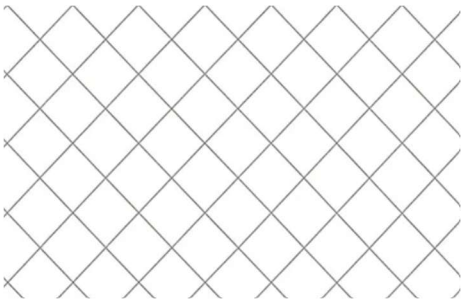
3) **Draw seven more shapes to show the shape will tessellate.**



4) **Draw nine more shapes to show the shape will tessellate.**

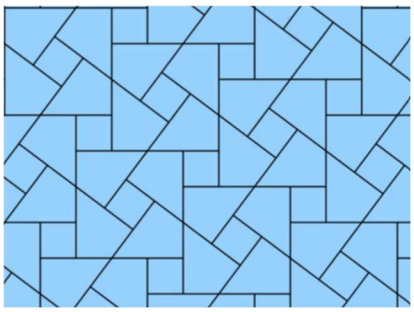
**Task 2 – Identify whether the following tessellations are regular or irregular tessellations.**

5)



Regular tessellation

6)

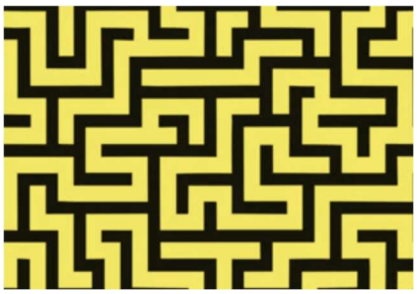


Irregular tessellation

7)

Regular tessellation

8)

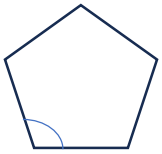


Irregular tessellation

Task 3

9) When will a regular polygon tessellate?
A regular polygon will tessellate if the interior angle can be divided by 360° without a remainder.

10) A regular pentagon is pictured below.



a. Work out the size of an interior angle of a regular pentagon.

$$(n-2)\times 180$$
$$=(5-2)\times 180$$
$$=540°$$

$$540\div 5=\mathbf{108}°$$

b. Will a regular polygon tessellate? Why or why not?
No, the interior angle 108° cannot be divided by 360° without a remainder.

11) A regular hexagon is pictured below.

a. Work out the size of an interior angle of a regular hexagon.

$$(n-2)\times 180$$
$$=(6-2)\times 180$$
$$=720°$$

$$720\div 6=\mathbf{120}°$$

b. Will a regular hexagon tessellate? Why or why not?
Yes, the interior angle 120° can be divided by 360° without a remainder.

12) A regular heptagon is pictured below.

a. Work out the size of an interior angle of a regular heptagon. Give your answer to 1 decimal place.

$$(n-2)\times 180$$
$$=(7-2)\times 180$$
$$=900$$

$$900\div 7=\mathbf{128.6}°$$

b. Will a regular heptagon tessellate? Why or why not?
No, the interior angle 128.6° cannot be divided by 360° without a remainder.

13) A regular octagon is pictured below.

a. Work out the size of an interior angle of a regular octagon.

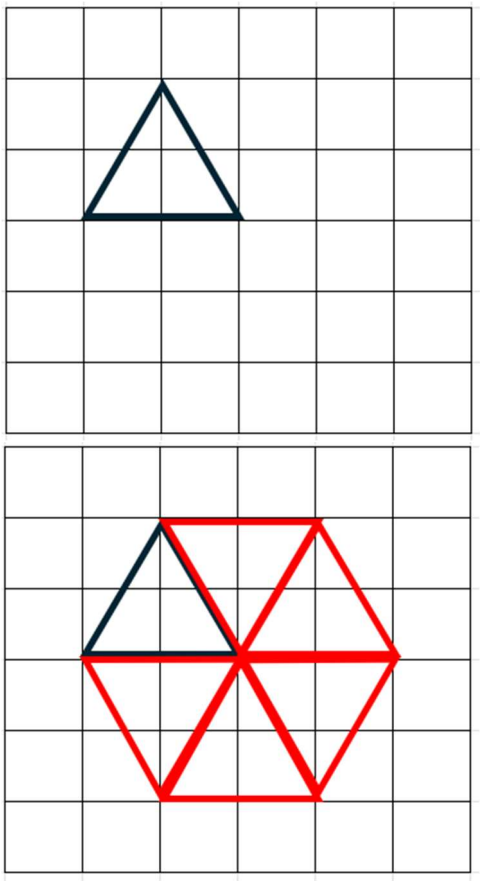
$$(n-2)\times 180$$
$$=(8-2)\times 180$$
$$=1080°$$

$$1080\div 8=\mathbf{135}°$$

b. Will a regular heptagon tessellate? Why or why not?
No, the interior angle 135° cannot be divided by 360° without a remainder.

Task 4

14) Equilateral triangles will tessellate. Use the grid to show that six equilateral triangles will tessellate into a regular hexagon.



15) A rhombus will tessellate. Use the grid to show that eight rhombuses will tessellate into a larger rhombus.