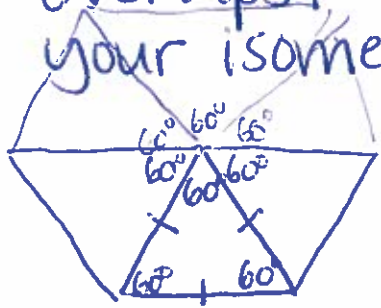


2/1/18

A Tessellation or tiling is a repeating pattern of figures that completely covers a plane without gaps or overlaps. You can create them with your isometries.



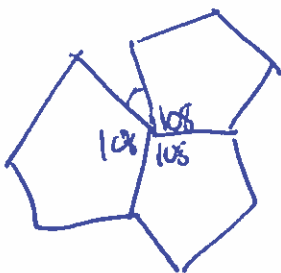
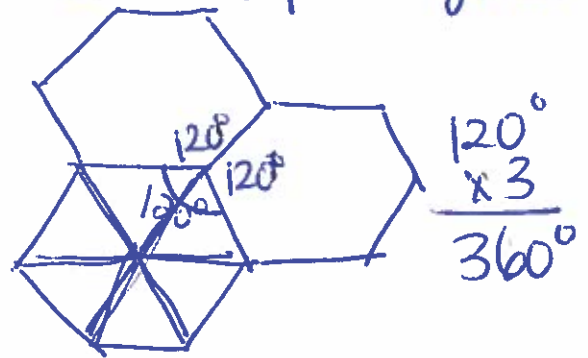
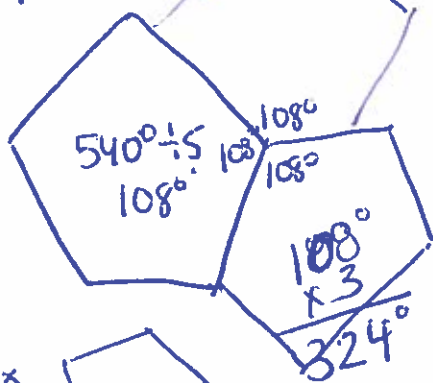
$$180 \div 3 = 60^\circ$$

$$60^\circ \times 6 = 360^\circ$$

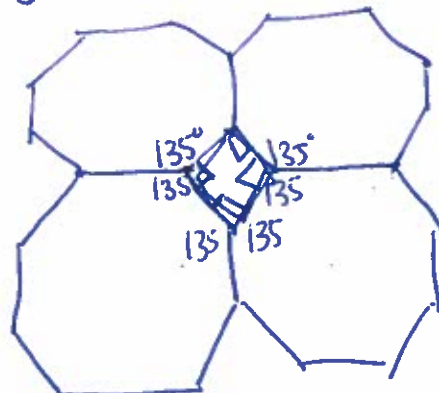
equilateral Δ

square $90^\circ \times 4 = 360^\circ$

~~pentagon~~ cannot tile with pentagons



octagon: $1080^\circ \div 8 = 135^\circ$



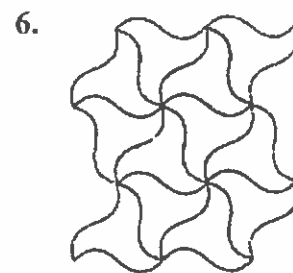
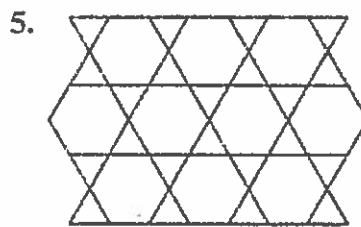
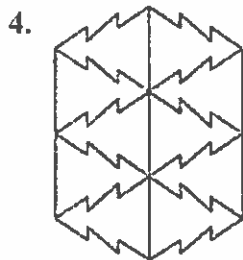
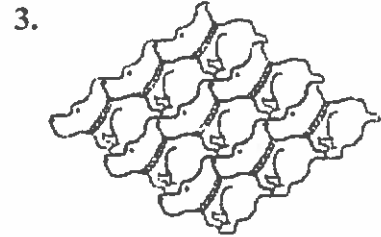
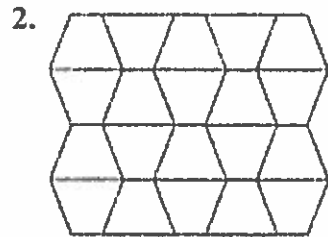
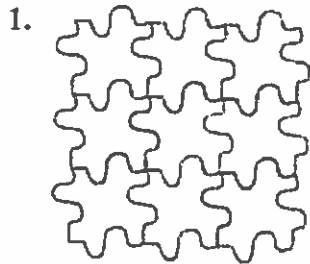
$$\begin{array}{r} 135 \\ \times 2 \\ \hline 270^\circ \\ + 90 \\ \hline 360^\circ \end{array}$$

Regular polygons

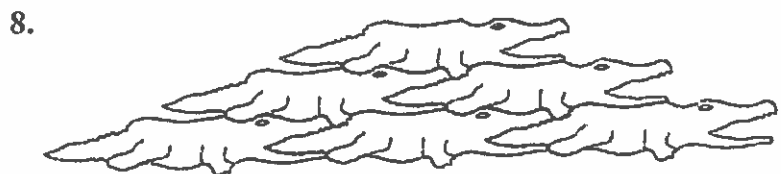
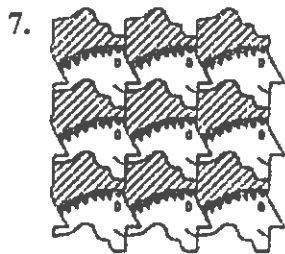
- 3 triangle 180°
- 4 quadrilateral 360°
- 5 pentagon 540°
- 6 hexagon 720°
- 7 heptagon 900°
- 8 octagon 1080°

Practice 9-7: Tessellations

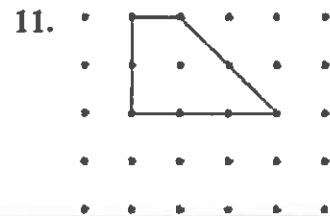
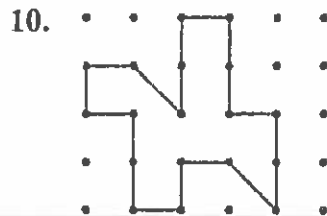
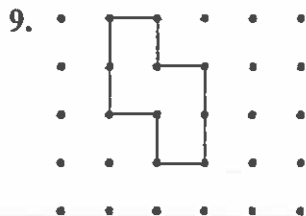
Describe the symmetries of each tessellation. Copy a portion of the tessellation, and draw any centers of rotational symmetry or lines of symmetry.



Identify the repeating figure or figures that make up each tessellation.



Use each figure to create a tessellation on dot paper.



Determine whether each figure will tessellate a plane.

12. rhombus

13. acute triangle

14. regular decagon

15. regular hexagon

16. regular dodecagon

17. regular 15-gon