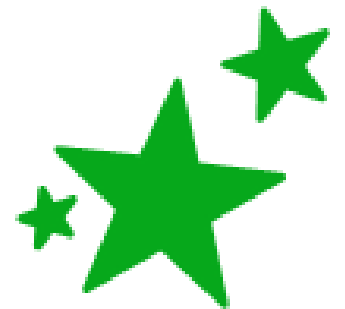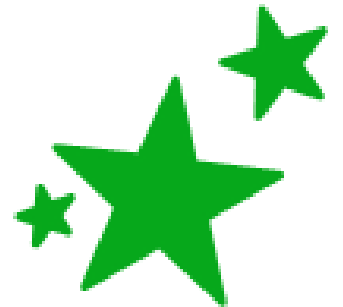9 - 3
Rotations

9 - 4
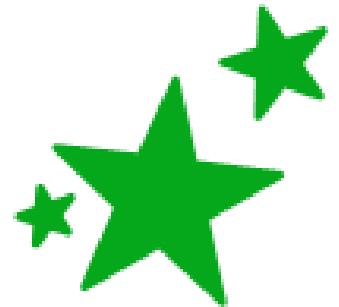**Tessellations**

rotation:

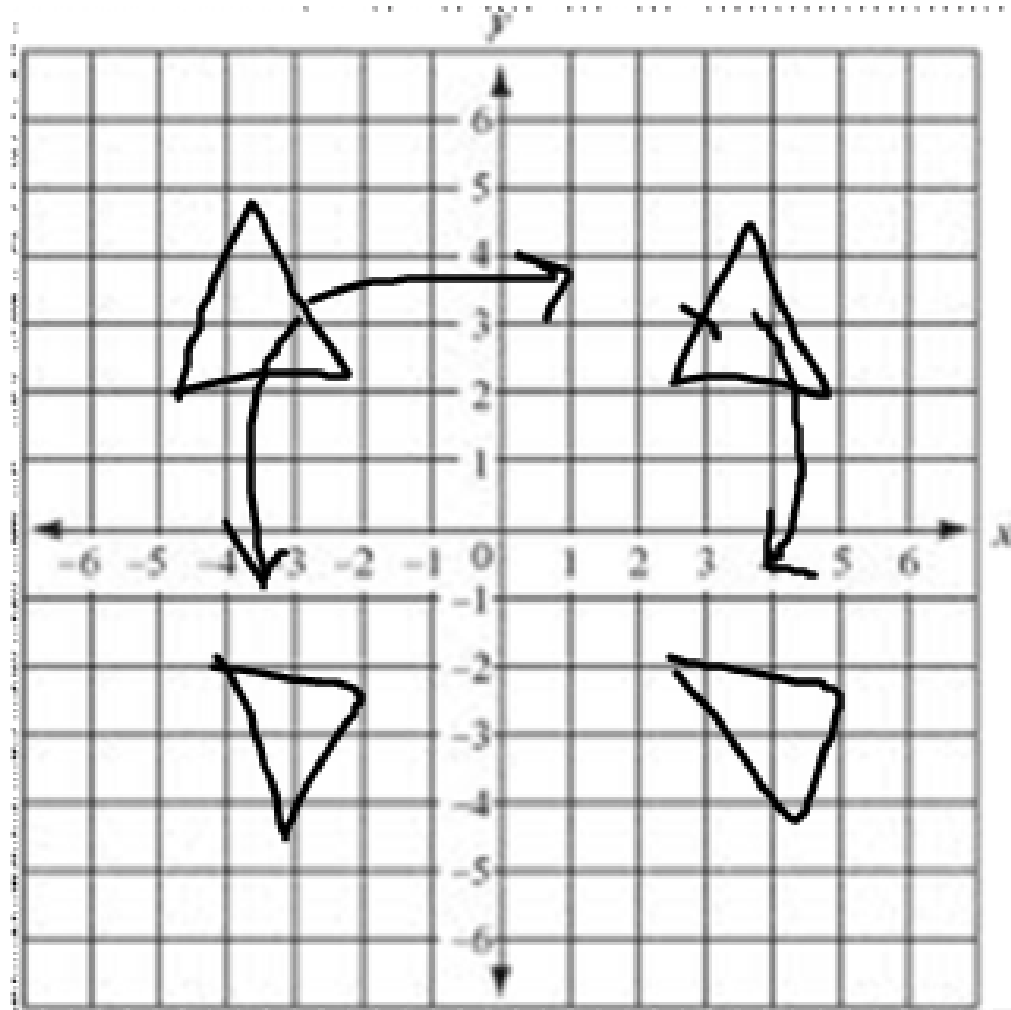# Another way to perform rotations is by...
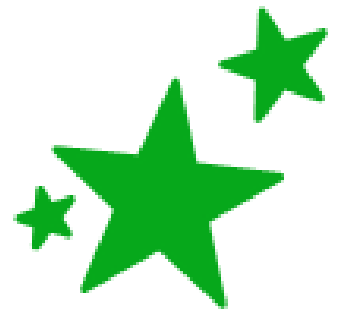
Corollary 9.1:
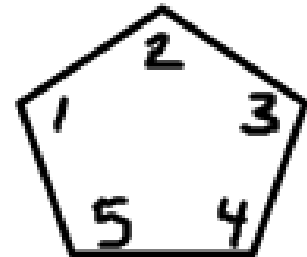Reflecting an image successively in two perpendicular lines results in a 180° rotation.

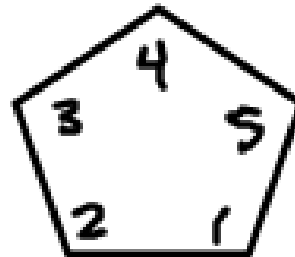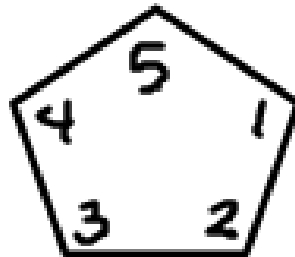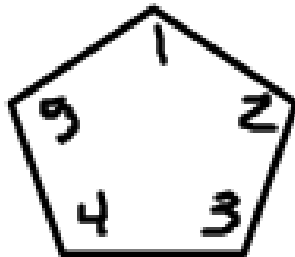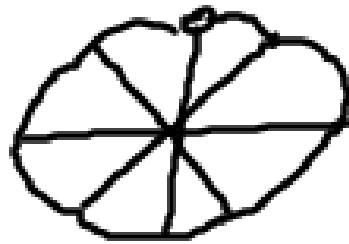# Ex: Rotate △FGH 180° by reflecting it it in the y-axis and then the x-axis. △FGH has vertices F(-6, 2), G(-2, 3), and H(-4, 4).

rotational symmetry: rotate a figure $< 360°$ so that the image and preimage are identical

Example:

rotational symmetry of _order 5_

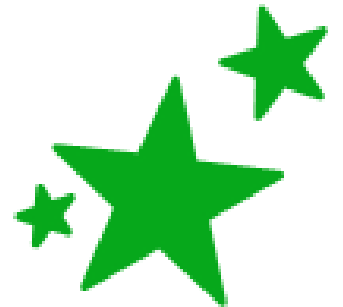magnitude of _72°_

$$\frac{360}{5}$$

tessellation: transform figure(s) to cover a plane with no gaps or overlaps

How do you know if it will tessellate?
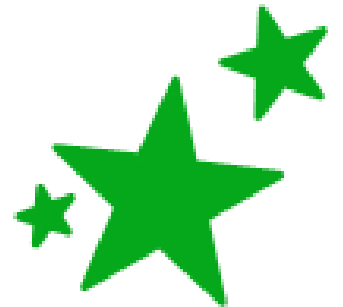regular polygon with an interior angle that is a factor of 360

triangle	square	pentagon	hexagon	heptagon	octagon
60°	90°	108°	120°	128.6°	135°
yes	yes	no	yes	no	no

regular tessellation:

uniform:

semi-regular tessellation: