7.6 Notes

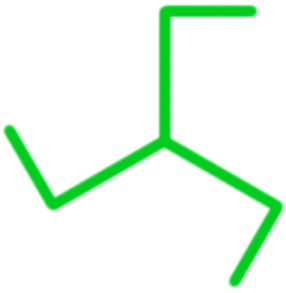
Friday, May 13, 2016 10:02 AM

7.6 – Rotations and Rotational Symmetry

Focus: Draw and classify shapes with rotational symmetry.

Main Ideas:

Warmup:
Put your pencil in the Centre of the shape. Rotate the tracing one complete turn about your pencil, counting the number of times the rotation coincides with the original shape, and write this number down.



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What is rotational symmetry?

- A shape has 'rotational symmetry' when it coincides with itself after a rotation of less than 360° about its centre.

What is 'order of rotation'?

- the number of times a shape coincides with itself after a rotation of 360°. For any shape, the order is at least 1.

What is the 'angle of rotation symmetry'?

$$\text{angle of rotation symmetry} = \frac{360^\circ}{\text{order of rotation}}$$

What shapes do not have rotational symmetry? Give an example.

A shape with order 1 does not have rotational symmetry. So to have rotational symmetry a shape must coincide with itself at least once in a rotation of less than 360°

What is a transformation?

a transformation is a translation, rotation or reflection

↑ moving an object without turning or flipping it.

Ex1
Determine if the shape has rotational symmetry, and if it does, state the order of rotation and the angle of rotation symmetry.

a)

order: 4
angle: $\frac{360}{4} = 90°$

b)

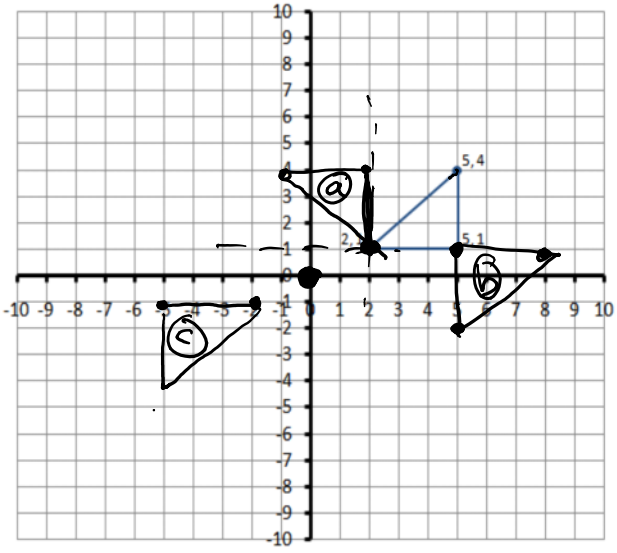
order: 2
angle: $\frac{360°}{2} = 180°$

c)

order: 1
angle: $\frac{360°}{1} = 360°$

Sometimes, the point of rotation is not the middle of the shape.

Ex2
a) Rotate the triangle 270° clockwise about the point (2, 1)
b) Rotate the triangle 180° clockwise about the point (5, 1)
c) 180° counter clockwise about the origin



Reflection: When you are being asked to rotate an image, what specifics must you first know?

- Assignment: p. 357 # 3-6, 9, 10
  p. 365 # 4-9, 11
- Quiz next class 7.1-7.4
- Chapter 7 test May 24th