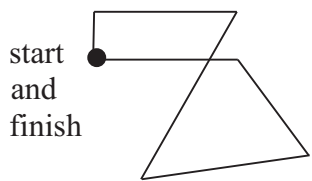


NAME \_\_\_\_\_

**Module 9**      **Characteristics of Geometric Shapes**  
**Lesson 1**      **Polygons**

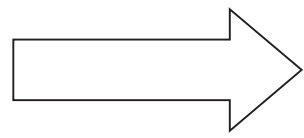
**Set 1**

**1** The diagram shows the path that Ms. Chinn walks every morning in her neighborhood. Is the path a simple or complex polygon? Explain.

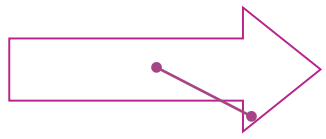


**Complex: Two sides cross each other.**

**2** Is the polygon convex or concave? Explain.

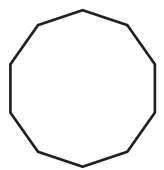


**Concave: When a line segment connecting two interior points is drawn, part of the segment lies outside the polygon.**



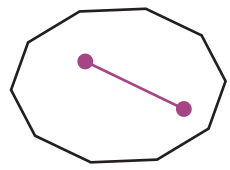
**Set 2**

**1** Classify the polygon according to the number of sides.



**Nonagon**

**2** Nina called the polygon shown here a concave decagon. Find and explain Nina's error.



**The polygon is not concave. A line segment joining any two interior points would lie entirely inside the polygon.**

3

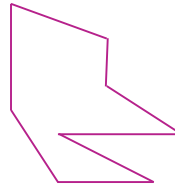
Sketch both a convex octagon and a concave octagon.

Possible answers:

Convex octagon



Concave octagon



Set 3

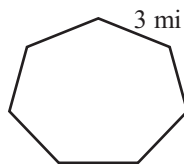
1

Determine if this statement is true or false: In an irregular polygon, all of the sides are equal, and all of the angles are equal.

**False: If all the sides are equal and all the angles are equal, then the polygon is a regular polygon.**

2

The diagram shows the outline of a park in the shape of a regular heptagon. If one side of the park measures three miles, what is the distance around the entire outer edge of the park?



$$3 \text{ miles} \times 7 = 21 \text{ miles}$$

**The distance around the park is 21 miles.**