

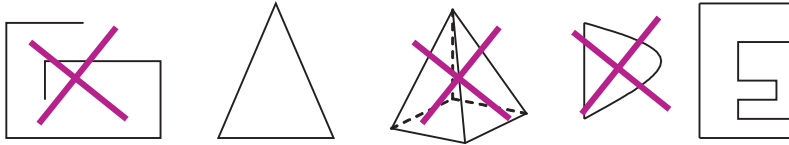
Independent Practice

9.1

NAME _____

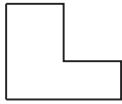
Module 9 Characteristics of Geometric Shapes
Lesson 1 Polygons

1. Draw an X through the figures that are not polygons.



Tell if each polygon is concave or convex.

2.



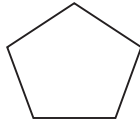
Concave

3.



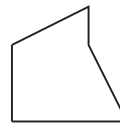
Convex

4.



Convex

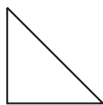
5.



Concave

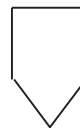
Write *regular* or *irregular*. Then, name the polygon according to its number of sides.

6.



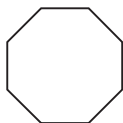
Irregular triangle

7.



Irregular pentagon

8.



Regular octagon

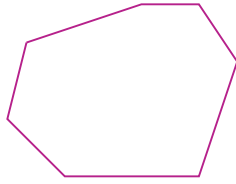
9.



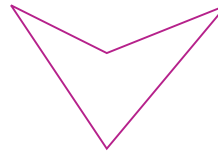
Regular quadrilateral

Sketch the polygon described.

10. Convex irregular heptagon



11. Concave quadrilateral



Journal

1. What must be true about a figure if it is a polygon? What must be true if it is a simple polygon?
2. Explain the difference between a convex and concave polygon. Draw an example of each.
3. Francesca drew a quadrilateral with four congruent angles. Without seeing her figure, explain if you can determine whether or not her quadrilateral is a regular polygon.

Cumulative Review

1. Name the rays that form $\angle BEC$.

\overrightarrow{EB} and \overrightarrow{EC}

2. Name the points collinear with points H and K .

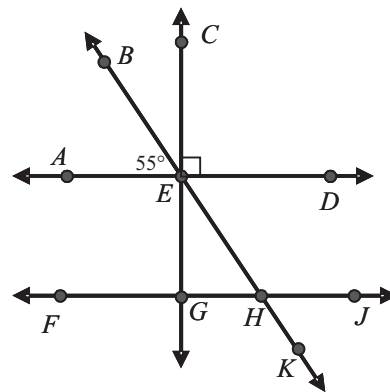
B and E

3. Name the points collinear with points H and J .

F and G

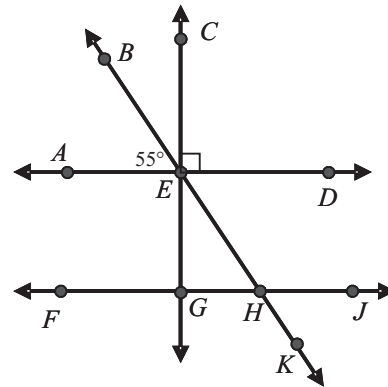
4. Which angle is vertical to $\angle AEB$?

$\angle HED$



NAME _____

Module 9 Characteristics of Geometric Shapes
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$$\overline{AD} \parallel \overline{FG}$$

5. Find $m\angle EGH$.

90°

6. Find $m\angle GHE$.

55°

7. Find $m\angle EHJ$.

125°

8. Name three angles congruent to $\angle EHJ$.

$\angle GHK, \angle BED, \angle AEH$

9. Name a pair of supplementary congruent angles.

Possible answer: $\angle FGE$ and $\angle JGE$

10. Classify $\triangle EGH$ by its angles and by its sides.

Right scalene

Possible Journal Answers

1. If a figure is a polygon, then it must be a closed two-dimensional figure. It is made up of line segments only, so there are no curves. The segments intersect at their endpoints. If the polygon is a simple polygon, the line segments do not cross each other.
2. In a convex polygon, it is impossible to draw two points inside the polygon so that the segment connecting them is not entirely inside the polygon. In a concave polygon, it is possible to draw points inside the polygon and have the segment connecting them be outside, or partially outside, of the polygon.



3. Knowing that a quadrilateral has four equal angles is not enough to know if the figure is regular because the side lengths are unknown. The figure could be regular if all the sides are the same length. It would look like this.



They could have different side lengths, however, and look like this. This is not a regular quadrilateral.

