





LESSON 7-5 Practice B Polygons

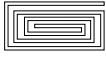
Determine whether each figure is a polygon. If it is not, explain why not.


1.  yes

2.  no; the lines cross


3.  no; curved lines


4.  yes


5.  yes

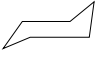
6.  no; not a closed figure


Name each polygon.

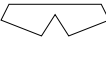
7.  decagon

8.  triangle


9.  octagon


10.  hexagon


11.  quadrilateral

12.  heptagon

Determine whether each figure is a regular polygon. If it is not, explain why not.

13.  no; all angles not congruent


14.  yes


15.  no; all sides and angles not congruent


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
LESSON 7-5 Practice C Polygons

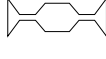
Determine whether each figure is a polygon. If it is not, explain why not.


1.  no; lines cross

2.  yes


3.  no; curved lines


4.  no; open figure


5.  yes


6.  no; lines cross


Name each polygon.


7.  pentagon

8.  decagon


9.  heptagon


10.  nonagon

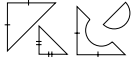
11.  quadrilateral

12.  octagon

Determine if the figures in each exercise can be put together to form a regular polygon. If so, name the regular polygon.

13.  yes; square

14.  yes; hexagon


15.  no


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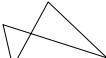
LESSON 7-5 Reteach Polygons

A **polygon** is a closed figure that starts and stops at the same point. A polygon is made up of line segments that do not cross.

Determine whether each figure is a polygon. If it is not, explain why not.

1.  yes

2.  no; not closed

3.  no; segments cross

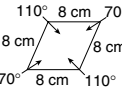
Polygons can be classified by the number of sides or angles. The number of sides and angles is the same.

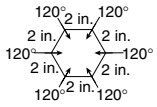
Complete the table.

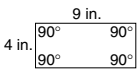
	Name	Number of Sides	Number of Angles
4.	Triangle	3	3
5.	Quadrilateral	4	4
6.	Pentagon	5	5
7.	Hexagon	6	6
8.	Heptagon	7	7
9.	Octagon	8	8
10.	Nonagon	9	9
11.	Decagon	10	10

All the sides of a **regular polygon** have the same length, and all the angles have the same measure.

Determine whether each is a regular polygon. If it is not, explain why not.

12.  no; angles not equal

13.  yes


14.  no; sides not equal

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LESSON 7-5 Challenge The Diagonal Count

Consecutive vertices connect the sides of a polygon. A **diagonal** of a polygon is a segment that connects two nonconsecutive vertices.

The figure below shows two diagonals of a pentagon.



Other diagonals can be drawn in the pentagon from other vertices.

For each polygon below, find the total number of diagonals from all the vertices. Do not count the same diagonal more than once. *Hint: Draw each figure and then draw all possible diagonals. Use different colors to distinguish the diagonals as the number of sides of the polygons increases.*

1. Triangle 0 diagonals







2. Quadrilateral 2 diagonals

3. Pentagon 5 diagonals

4. Hexagon 9 diagonals

5. Heptagon 14 diagonals

6. Octagon 20 diagonals

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