8.1 Classifying Polygons
Goal: to be able to describe polygons
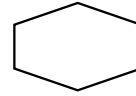
WARM-UP EXERCISES

1. What is the sum of the measures of the interior angles of a triangle?
2. In which kind of triangle are all three sides congruent?
3. In which kind of triangle are all three angles congruent?

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Polygon: a closed figure with at least 3 sides
   ** The sides are segments and only intersect at their endpoints
   ** A polygon is <u>convex</u> if a diagonal contains *no points outside* the polygon

   ** a polygon is <u>concave</u> if diagonals contains points *outside* the polygon
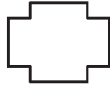
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Identify Convex and Concave Polygons

Decide whether the polygon is *convex* or *concave*.
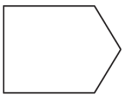
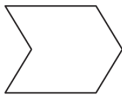a.   b.

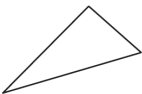Decide whether the polygon is *convex* or *concave*.
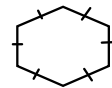
1.   2.   3.
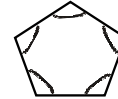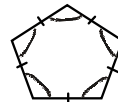
4.   5.   6.

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A polygon is equilateral if all of its sides are congruent.

A polygon is equiangular if all of its angles are congruent.

A polygon is regular if it is both equilateral and equiangular.

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Identify Regular Polygons

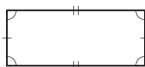Decide whether the polygon is regular. Explain your answer.

a.   b.

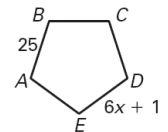Decide whether the polygon is regular. Explain your answer.

7.   8.   9.

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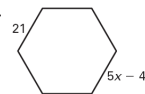
Using Algebra

The polygon is regular. Find the value of x.

B C
25
A D
$6x + 1$
E

The polygons are regular. Find the value of x.

10.   11.   12.

15 $x - 3$ 21 $5x - 4$ $(11x - 2)°$ $108°$

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