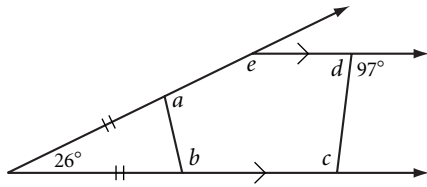


Lesson 5.1 • Polygon Sum Conjecture

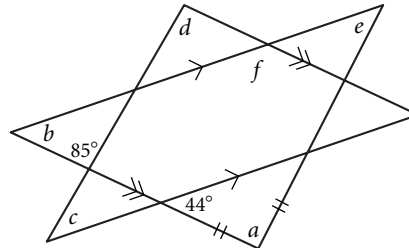
Name _____ Period _____ Date _____

In Exercises 1 and 2, find each lettered angle measure.

1. $a = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$, $c = \underline{\hspace{1cm}}$,
 $d = \underline{\hspace{1cm}}$, $e = \underline{\hspace{1cm}}$



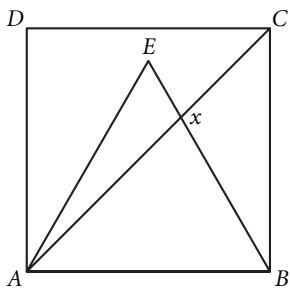
2. $a = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$, $c = \underline{\hspace{1cm}}$,
 $d = \underline{\hspace{1cm}}$, $e = \underline{\hspace{1cm}}$, $f = \underline{\hspace{1cm}}$



3. One exterior angle of a regular polygon measures 10° . What is the measure of each interior angle? How many sides does the polygon have?
4. The sum of the measures of the interior angles of a regular polygon is 2340° . How many sides does the polygon have?

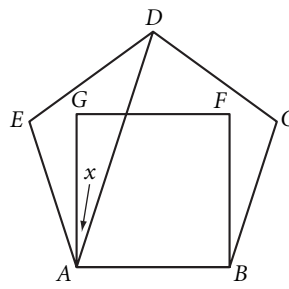
5. $ABCD$ is a square. ABE is an equilateral triangle.

$x = \underline{\hspace{1cm}}$



6. $ABCDE$ is a regular pentagon. $ABFG$ is a square.

$x = \underline{\hspace{1cm}}$



7. Use a protractor to draw pentagon $ABCDE$ with $m\angle A = 85^\circ$, $m\angle B = 125^\circ$, $m\angle C = 110^\circ$, and $m\angle D = 70^\circ$. What is $m\angle E$? Measure it, and check your work by calculating.

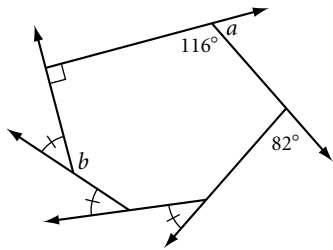
Lesson 5.2 • Exterior Angles of a Polygon

Name _____ Period _____ Date _____

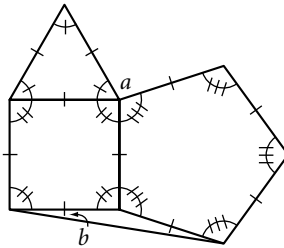
- How many sides does a regular polygon have if each exterior angle measures 30° ?
- How many sides does a polygon have if the sum of the measures of the interior angles is 3960° ?
- If the sum of the measures of the interior angles of a polygon equals the sum of the measures of its exterior angles, how many sides does it have?
- If the sum of the measures of the interior angles of a polygon is twice the sum of its exterior angles, how many sides does it have?

In Exercises 5–7, find each lettered angle measure.

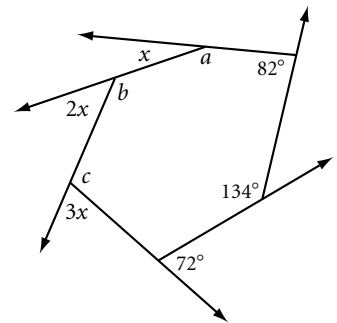
5. $a = \underline{\hspace{2cm}}$, $b = \underline{\hspace{2cm}}$



6. $a = \underline{\hspace{2cm}}$, $b = \underline{\hspace{2cm}}$

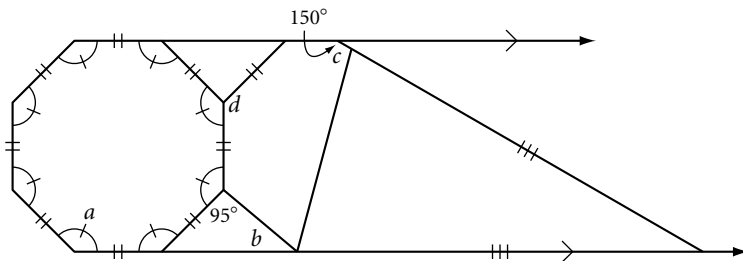


7. $a = \underline{\hspace{2cm}}$, $b = \underline{\hspace{2cm}}$,
 $c = \underline{\hspace{2cm}}$



8. Find each lettered angle measure.

$a = \underline{\hspace{2cm}}$
 $b = \underline{\hspace{2cm}}$
 $c = \underline{\hspace{2cm}}$
 $d = \underline{\hspace{2cm}}$



9. Construct an equiangular quadrilateral that is not regular.