

Pre-Algebra, Unit 13 Practice Test:
Angle Relationships in Triangles and Parallel Lines

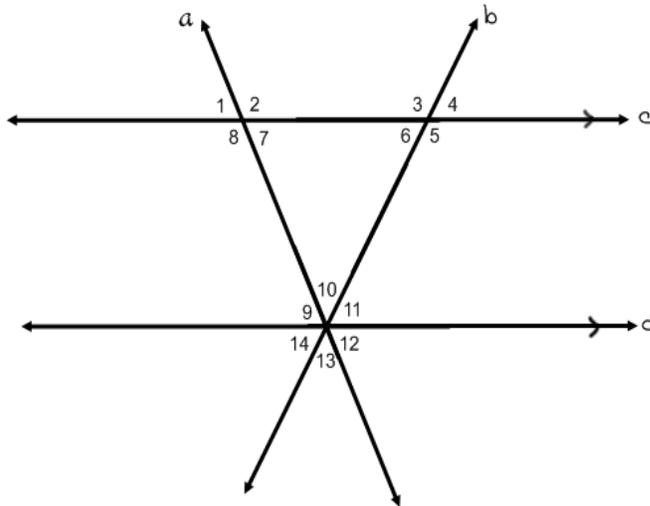
Name: _____

Date: _____

1. Fill in the blanks:

- a. The sum of the measures of the three angles of every triangle is _____.
- b. The sum of the measures of one set of exterior angles is _____.
- c. The sum of the measures of an interior angle of a triangle and its corresponding exterior angle is _____ because the angles are _____.

2. Use the picture below to identify (by name) the relationship for each pair of angles.



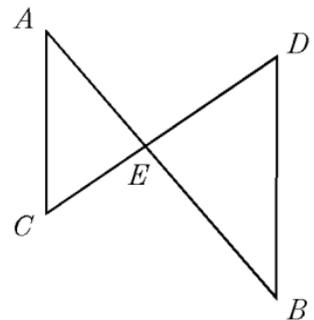
- $\angle 11$ and $\angle 14$ _____
- $\angle 9$ and $\angle 7$ _____
- $\angle 4$ and $\angle 14$ _____
- $\angle 7$ and $\angle 12$ _____
- $\angle 12 + \angle 13$ and $\angle 5$ _____
- $\angle 9 + \angle 10 + \angle 11$ _____

3. (SE) Use the picture above: if $m\angle 12 = 60^\circ$ and $m\angle 14 = 80^\circ$, find the measure of each of the following angles.

- $m\angle 1 =$ _____ $m\angle 3 =$ _____ $m\angle 9 =$ _____ $m\angle 11 =$ _____
- $m\angle 2 =$ _____ $m\angle 6 =$ _____ $m\angle 10 =$ _____

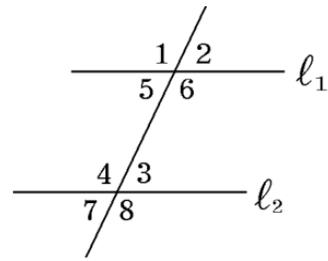
4. (SE) In the diagram, \overline{AB} and \overline{CD} intersect at E and $\overline{AC} \parallel \overline{DB}$. If $m\angle C = 58^\circ$ and $m\angle B = 35^\circ$, what is the $m\angle BED$?

$m\angle BED =$ _____



5. (SE) Which of the following facts proves that $l_1 \parallel l_2$?

- A. $\angle 6 \cong \angle 3$
- B. $\angle 6 \cong \angle 1$
- C. $\angle 1 \cong \angle 5$
- D. $\angle 1 \cong \angle 8$



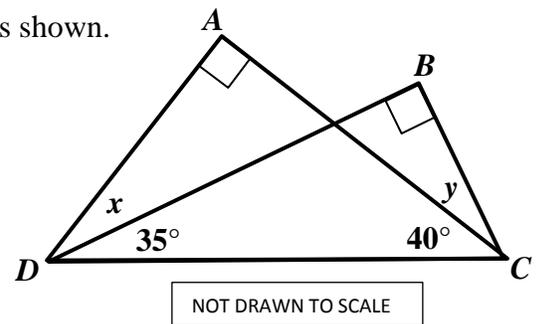
6. (SE) In $\triangle ABC$, $m\angle A = 3x - 20^\circ$, $m\angle B = 2x + 40^\circ$, and $m\angle C = 3x + 24^\circ$. What is the $m\angle C$?

- (A) 15°
- (B) 17°
- (C) 30°
- (D) 75°

7. (SBAC) Right triangle DAC and right triangle CBD overlap as shown. What are the values of x and y ? Show your work!

$x =$ _____

$y =$ _____



8. (SE) A flag is being designed (as shown to the right). The stripe is to be constructed so that it is parallel to the top and bottom of the flag. The triangular portion is in the shape of an equilateral triangle. You must determine the measure of $\angle x$ to show that the stripe is indeed parallel to the sides. Justify your answer.

