5.11 Spicy Quiz: Transversals and parallel lines

1. Given two parallel lines and a transversal intersecting them, creating eight angles labeled as shown. Identify each angle.
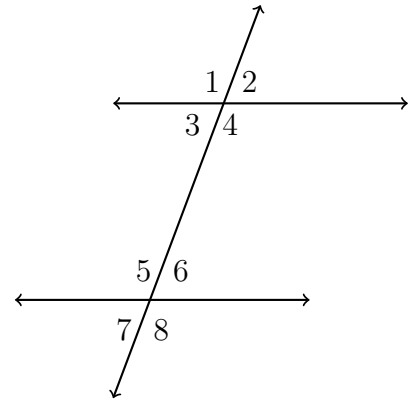
   (a) The angle that is opposite ∠2

   (b) An angle that makes a linear pair with ∠7

   (c) An acute angle

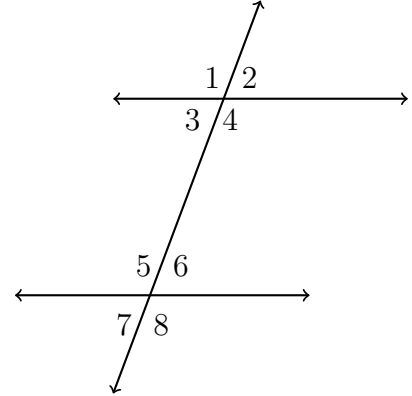   (d) The vertical angle to ∠5

   (e) An obtuse angle

2. Name the angle labeled in the diagram of two parallel lines crossed by a transversal.

(a) The angle *corresponding* to $\angle 6$

(b) The *alternate exterior* angle with $\angle 8$

(c) The *same-side interior* angle to $\angle 5$

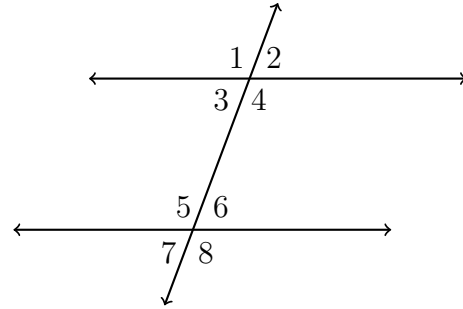(d) The *alternate interior* angle with $\angle 4$

3. Identify the relationships among the angles made by two parallel lines and a transversal, as shown. True or False:

(a) T   F $\angle 3 \cong \angle 6$

(b) T   F $\angle 4 \cong \angle 7$

(c) T   F $m\angle 3 + m\angle 5 = 180$

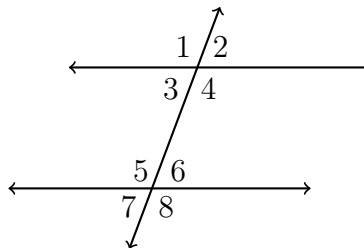(d) T   F $m\angle 1 + m\angle 8 = 180$

4. Given two parallel lines and a transversal, as shown. Write down each value, given that $m\angle 5 = 120°$.
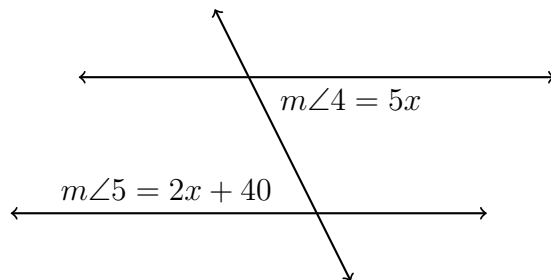
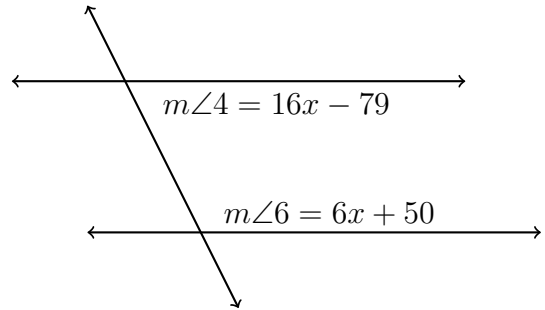   (a) $m\angle 3 =$

   (b) $m\angle 2 =$

   (c) $m\angle 4 = 2x$. Find x

5. Given two parallel lines and a transversal, with alternate interior angles $m\angle 4 = 5x$ and $m\angle 5 = 2x + 40$. Write an equation, then solve for x.

$$m\angle 4 = 5x$$

$$m\angle 5 = 2x + 40$$

6. Two parallel lines intersect a transversal, shown. Given the same-side interior angles $m\angle 4 = 16x - 79$ and $m\angle 6 = 6x + 50$. Solve for x then find the measure of $\angle 4$.

$$m\angle 4 = 16x - 79$$

$$m\angle 6 = 6x + 50$$

7. Given parallel lines $\overleftrightarrow{AB} \parallel \overleftrightarrow{CF}$, $m\angle BAE = 75°$ and $m\angle DAE = 55°$.

Find $m\angle ADC = x$ and $m\angle AEF = y$.