3.7 Review: Parallel lines, transversals, triangles mixed practice

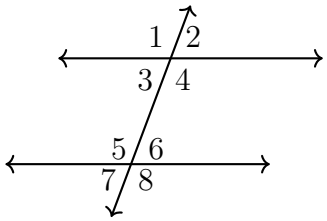
1. Identify the relationships among the angles made by two parallel lines and a transversal, as shown. True or False:

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

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

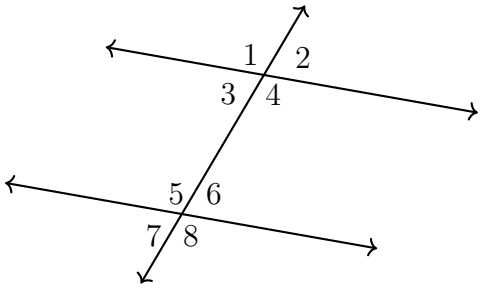
   (c) T F $m\angle 3 + m\angle 5 = 180$

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



2. Find $m\angle 1$ given two parallel lines and a transversal, with

   $m\angle 3 = 5x + 21$ $m\angle 5 = 9x - 9$

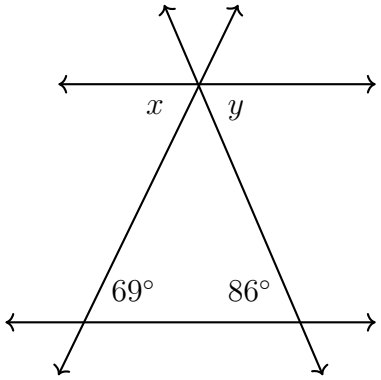


3. Given two parallel lines, two transversals

   (a) Find x, y

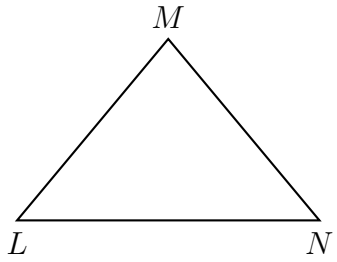
   (b) What relationship are you using?

   (e.g. vertical angles, corresponding angles, same-side exterior angles, alternate interior angles, etc.)

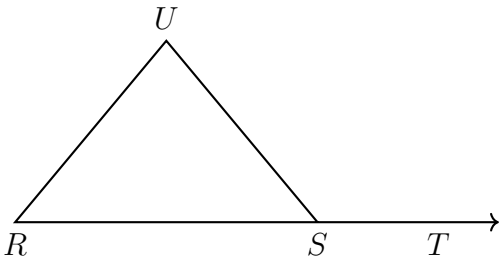


4. The measures in degrees of the three angles of a triangle are $2x$, $\frac{2}{5}x$, and $\frac{1}{10}x$. Find the measures of the triangle's angles.

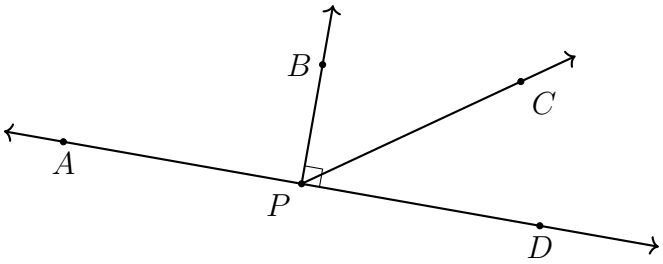
5. Given $\triangle LMN$ with $m\angle L = 2x + 20$, $m\angle N = 3x + 5$, and $m\angle M = 5x + 5$. Find x.



6. Given $\triangle RSU$. If $m\angle UST = x + 50$, $m\angle R = x - 20$, and $m\angle U = x + 10$, find $m\angle R$.

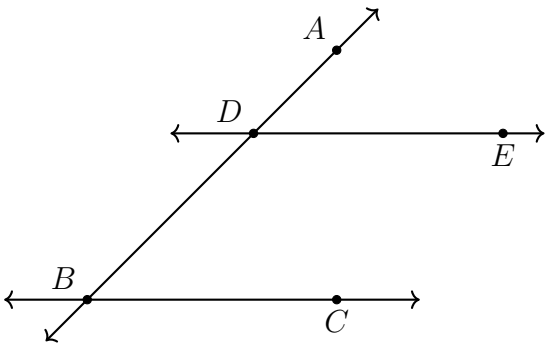


7. Angles APC and CPD form a linear pair. $m\angle APC = 10x + 15$ and $m\angle CPD = 3x - 4$. Find $m\angle CPD$. Check your answer for full credit.



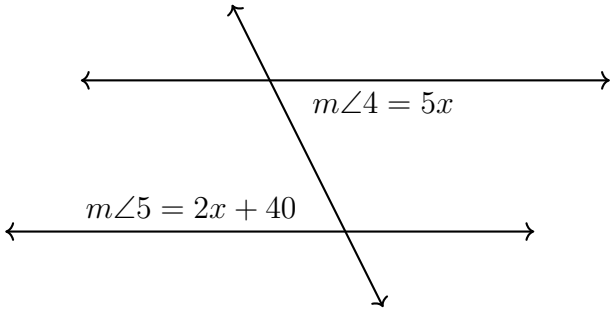
8. Given two parallel lines that intersect a transversal, $\overleftrightarrow{DE} || \overleftrightarrow{BC}$. $m\angle ABC = 3x - 5$ and $m\angle BDE = 6x + 5$.

   Find $m\angle ADE$.

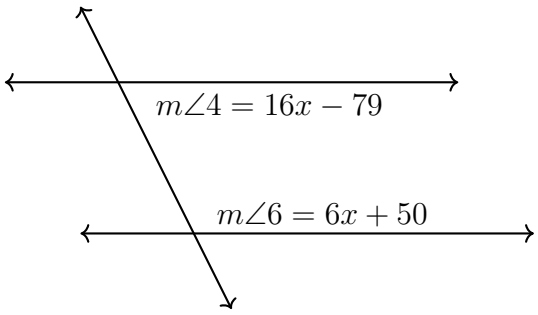


Do Now Solve

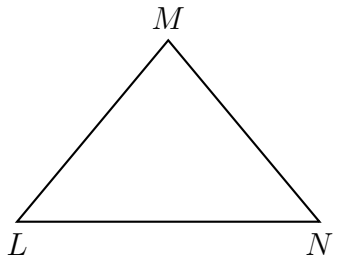
9. Given two parallel lines and a transversal, with alternate interior angles $m\angle 4 = 5x$ and $m\angle 5 = 2x + 40$. Write an equation, to solve for x, but do not solve it.



10. Two parallel lines intersect a transversal, shown. Given the same-side interior angles $m\angle 4 = 16x - 79$ and $m\angle 6 = 6x + 50$. Write an equation, but do not solve it.



11. Given isosceles $\triangle LMN$, $\overline{LM} \cong \overline{NM}$. If $m\angle L = 4x + 19$ and $m\angle N = 7x - 8$, find $m\angle M$.



12. The measures in degrees of the three angles of a triangle are $3x$, $\frac{1}{2}x + 7$, and $5x - 65$. Find x.

13. A triangle has two angles measuring $x°$ and $y°$ respectively. Find the measure of the third angle as an expression of x and y.

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

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