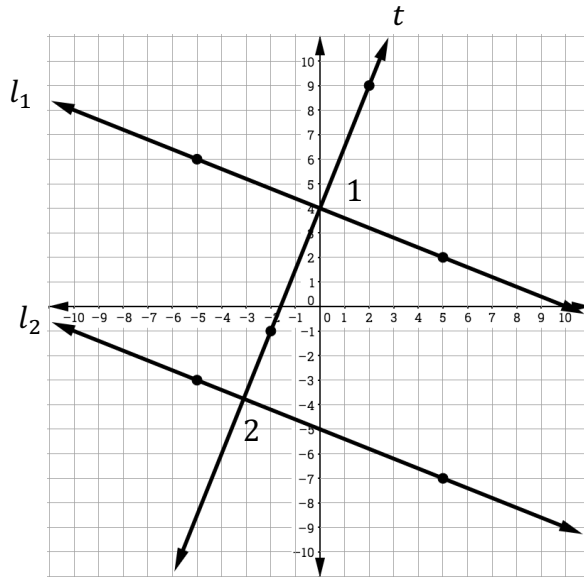


Angles
Perpendicular Transversals
Independent Practice

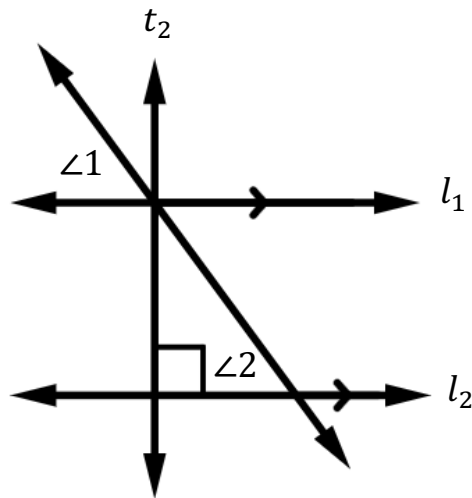
1. Consider the lines and the transversal drawn in the coordinate plane below.



Part A: Prove that $\angle 1 \cong \angle 2$. Justify your work.

Part B: Prove that $m\angle 1 = m\angle 2 = 90^\circ$. Justify your work.

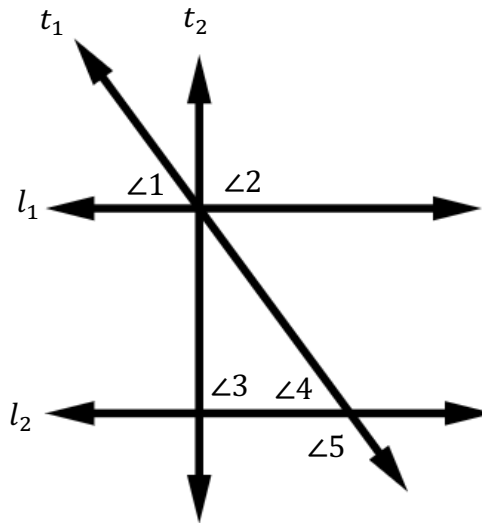
2. Consider the figure below.



Part A: If $l_1 \parallel l_2$, then use the Perpendicular Transversal Theorem to prove that $\angle 1 \cong \angle 2$. Write your answer in a paragraph proof.

Part B: Suppose your friend also proved correctly that $\angle 1 \cong \angle 2$. The difference is that your friend did not use the Perpendicular Transversal Theorem. Determine how your friend was able to prove the same statement using a different approach.

3. Consider the figure below.



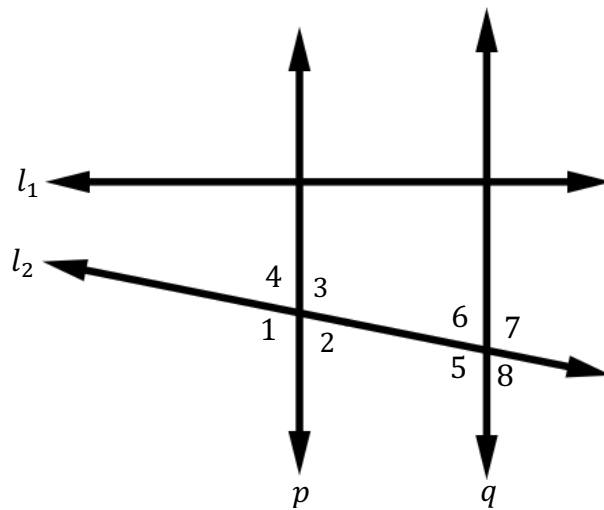
Given: $m\angle 1 = 52^\circ$, $m\angle 2 = 90^\circ$, and $m\angle 3 = 90^\circ$

Prove: $m\angle 5 = 128^\circ$

Complete the following two-column proof.

Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.

4. Consider the figure below.



Assume that $l_1 \perp p$, $l_1 \perp q$, $m\angle 6 = (5x + 4)^\circ$ and $m\angle 8 = (10x - 19)^\circ$.

Part A: Determine the value of x .

Part B: Prove theoretically and algebraically that $m\angle 4 + m\angle 7 = 180$.