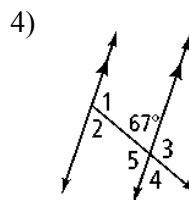
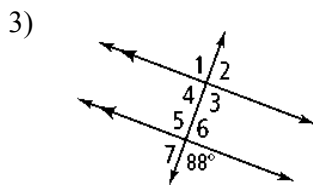
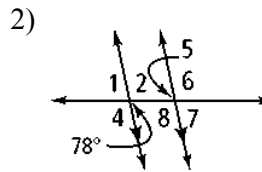
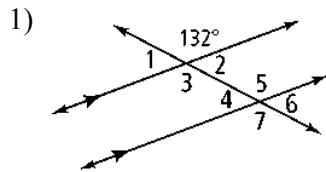


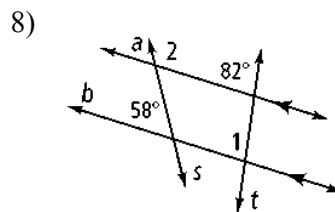
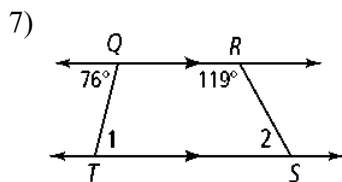
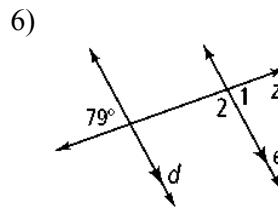
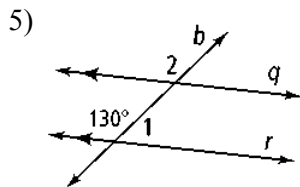
3.2 – Properties of Parallel Lines

Identify all the numbered angles that are congruent to the given angle. Justify your answers.

Example: $\angle 5 - CA, \angle 7 - AEA, etc.$ (If more than one reason, please state.)

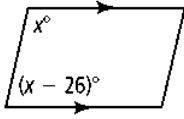


Find $m\angle 1$ and $m\angle 2$. Justify each answer.

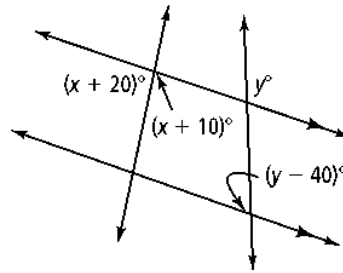


Find the value of x . Then find the measure of each labeled angle. Show all algebraic work.

9)



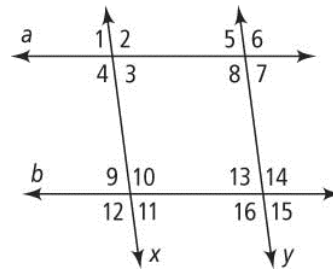
10)



11) Write a two-column proof.

Given: $a \parallel b, x \parallel y$

Prove: $\angle 4$ is supplementary to $\angle 15$.



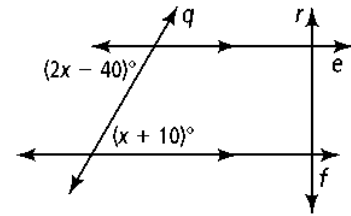
Statement	Reasons
1. _____	_____
2. $\angle 15 \cong \angle 9$	_____
3. $m\angle 15 \cong m\angle 9$	_____
4. $\angle 9$ and $\angle 4$ are supplementary	_____
5. $m\angle 9 + m\angle 4 = 180$	_____
6. _____ $+ m\angle 4 = 180$	_____
7. _____	_____

12) One pair of parallel lines intersect a second pair of parallel lines. One of the angles of intersection has a measure of 60. How can you determine the measure of the four interior angles? Draw a sketch to support your answer.

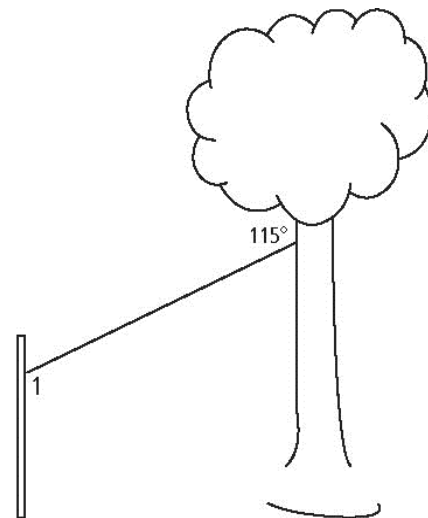
13) Analyze the solutions below. Which solution for the figure at the right is incorrect? Explain.

a) $2x - 40 = x + 10$
 $x - 40 = 10$
 $x = 50$

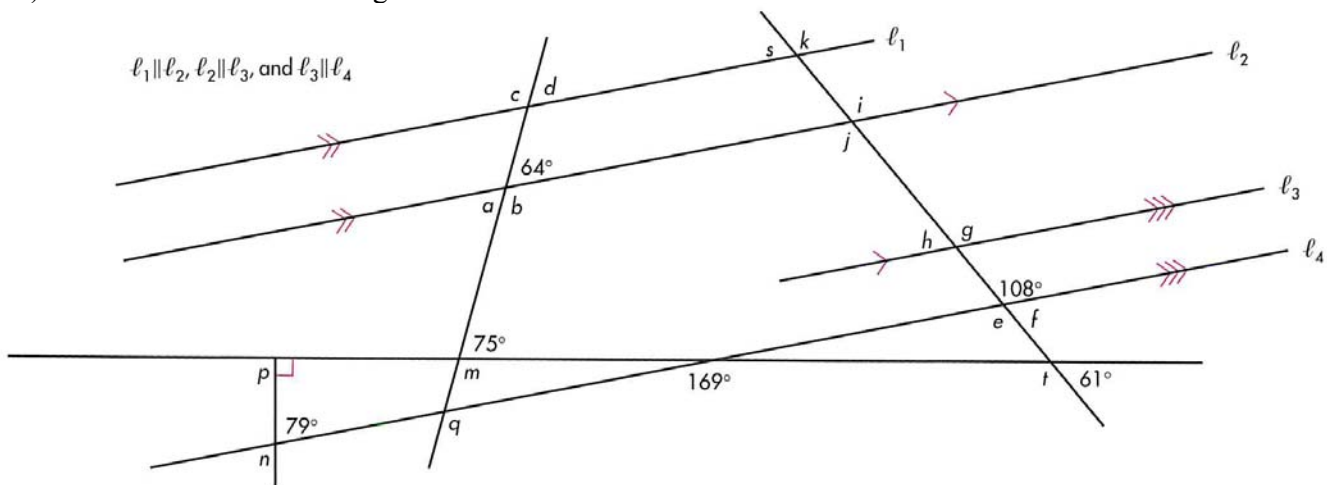
b) $2x - 40 + (x + 10) = 180$
 $3x - 30 = 180$
 $3x = 210$
 $x = 70$



14) A zip line consists of a pulley attached to a cable that is strung at an angle between two objects. In the zip line at the right, one end of the cable is attached to a tree. The other end is attached to a post parallel to the tree. What is the measure of $\angle 1$? What type of angle pair do $\angle 1$ and the given angle represent?



15) Calculate each lettered angle below.



- a = _____ d = _____ g = _____ j = _____ n = _____ s = _____
 b = _____ e = _____ h = _____ k = _____ p = _____ t = _____
 c = _____ f = _____ i = _____ m = _____ q = _____