Name_____ Date_____

3.1 – Parallel Lines and Transversals

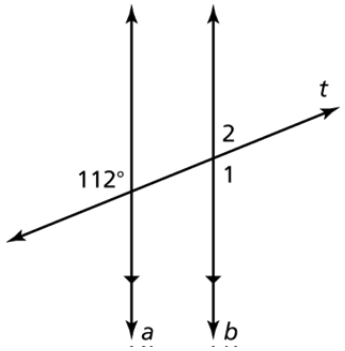
Use the figure to find the relationship between angles. Afterwards find the measure of the numbered angles.

1) 112° and $\angle 1$ are _____ angles.

2) $\angle 1$ and $\angle 2$ are _____ angles.

3) $m\angle 1 =$_____

4) $m\angle 2 =$_____



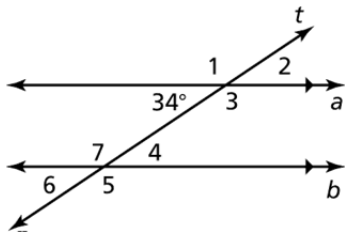
5) 34° and $\angle 2$ are _____ angles.

6) $\angle 1$ and $\angle 2$ are _____ angles.

7) $\angle 2$ and $\angle 4$ are _____ angles.

8) $\angle 3$ and $\angle 7$ are _____ angles.

9) $\angle 1$ and $\angle 5$ are _____ angles.

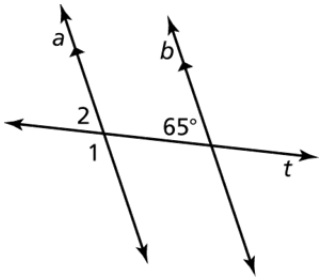


10) $m\angle 1 =$_____ 11) $m\angle 2 =$_____ 12) $m\angle 3 =$_____

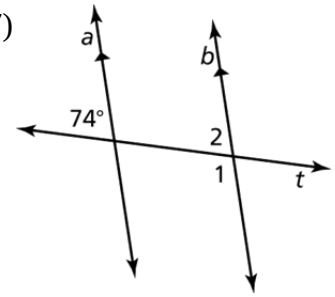
13) $m\angle 4 =$_____ 14) $m\angle 5 =$_____ 15) $m\angle 6 =$_____

Use the figure to find the measures of the numbered angles.

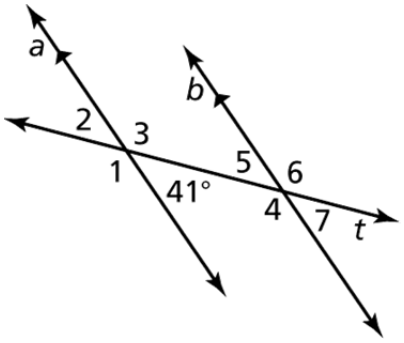
16)



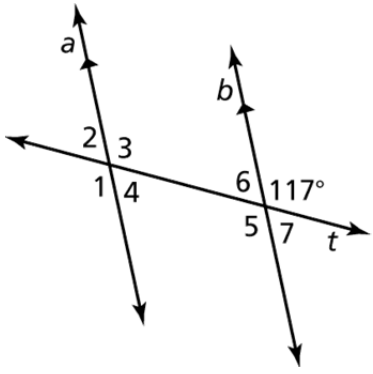
17)



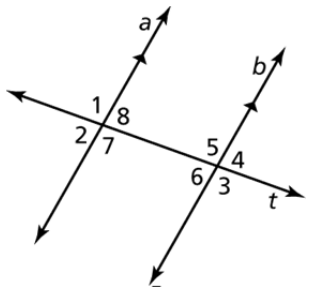
18)



19)



Complete the statement. Explain your reasoning.



20) If the measure of $\angle 1 = 160°$, then the measure of $\angle 5 =$ _____.

Why?

21) If the measure of $\angle 6 = 37°$, then the measure of $\angle 4 =$ _____.

Why?

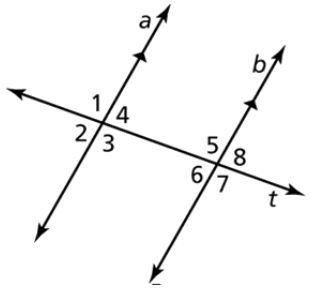
22) If the measure of $\angle 8 = 82°$, then the measure of $\angle 3 =$ _____.

Why?

23) If the measure of $\angle 4 = 60°$, then the measure of $\angle 5 =$ _____.

Why?

Correct the following statements about the numbered angles by replacing the underlined words with the correct words.



24) $\angle 2$ is congruent to $\angle 4$. $\angle 4$ is congruent to $\angle 8$.

So, $\angle 2$ is supplementary to $\angle 8$.

25) $\angle 6$ is congruent to $\angle 3$. $\angle 3$ is congruent to $\angle 1$.

So, $\angle 6$ is congruent to $\angle 1$.

26) If a transversal intersects two parallel lines, is it possible for all of the angles formed to be acute angles? Explain.