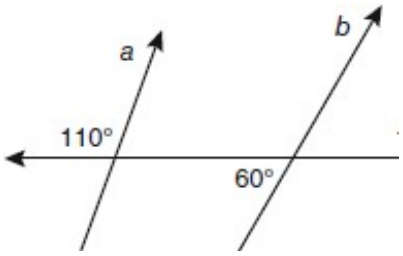
Name _____ Date _____

Mr. Schlansky Geometry

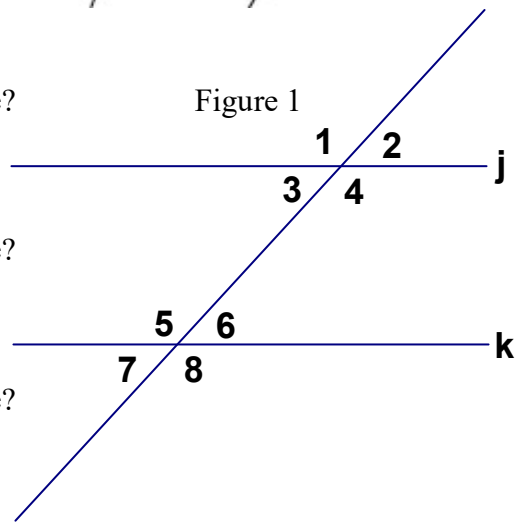
Parallel Lines Cut By a Transversal Theory

1. Based on the diagram below, which statement is true?



1) $a \parallel b$
2) $a \parallel c$
3) $b \parallel c$
4) $d \parallel e$

Figure 1

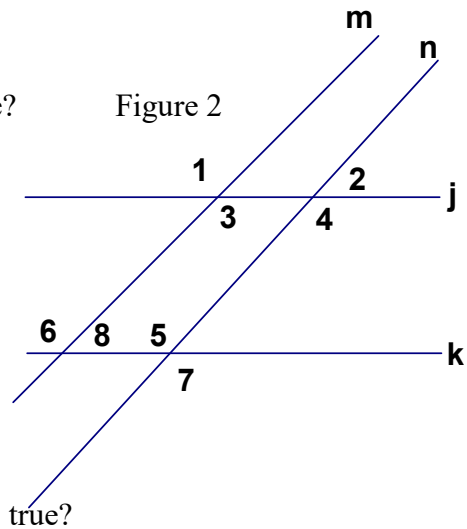


2. In figure 1, if j || k, which of the following must be true?
(1) $\angle 1 \cong \angle 2$ (3) $\angle 2 \cong \angle 4$
(2) $\angle 1$ is supplementary to $\angle 5$ (4) $\angle 3 \cong \angle 6$

3. In figure 1, if j || k, which of the following must be true?
(1) $\angle 1$ is supplementary to $\angle 7$ (3) $\angle 6 \cong \angle 8$
(2) $\angle 1$ is supplementary to $\angle 4$ (4) $\angle 5 \cong \angle 2$

4. In figure 1, if j || k, which of the following must be true?
(1) $\angle 5$ is supplementary to $\angle 4$ (3) $\angle 6 \cong \angle 4$
(2) $\angle 2$ is supplementary to $\angle 3$ (4) $\angle 5 \cong \angle 4$

Figure 2



5. In figure 2, if $\angle 1 \cong \angle 4$, which of the following must be true?
(1) j || k (3) m || n
(2) $\angle 5 \cong \angle 8$ (4) m not || to n

6. In figure 2, if $\angle 7$ is not supplementary to $\angle 2$, which of the following *must* be true?
(1) j || k (3) m || n
(2) j not || to k (4) m not || to n

7. In figure 2, if $\angle 4$ *not* $\cong \angle 1$, which of the following must be true?
(1) j || k (3) m || n
(2) j not || to k (4) m not || to n