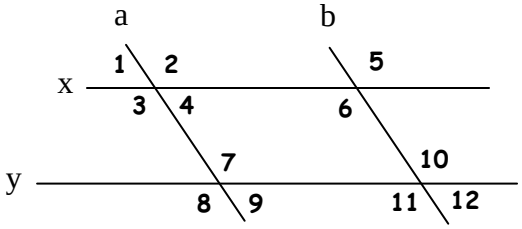
PAP Geometry 2.5 Name_____

Prove Lines are Parallel

For 1 – 5, using the given information determine if any lines are parallel.

If yes, use a postulate or theorem to tell why.



1. $\angle 7 \cong \angle 11$

2. $\angle 4 \cong \angle 9$

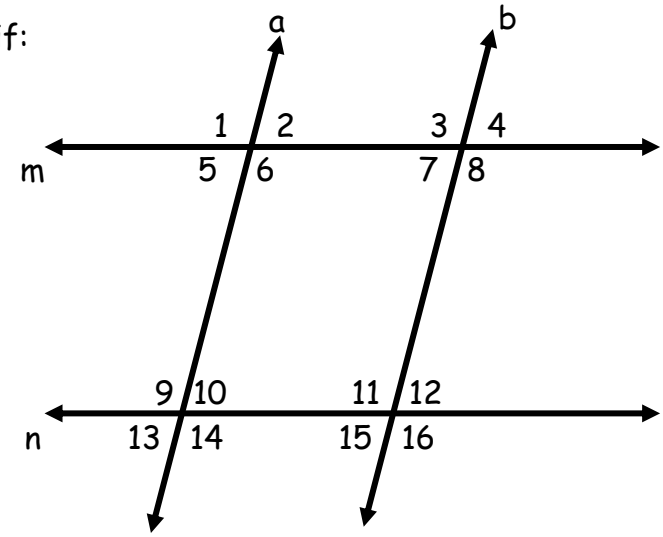
3. $\angle 9 \cong \angle 11$

4. $\angle 6 \cong \angle 5$

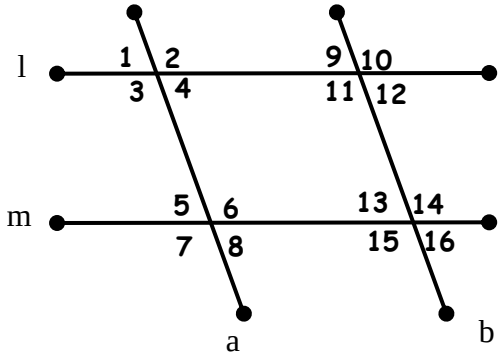
5. $\angle 6 = 70^\circ$ and $\angle 4 = 110^\circ$

6. Determine what lines must be parallel if:

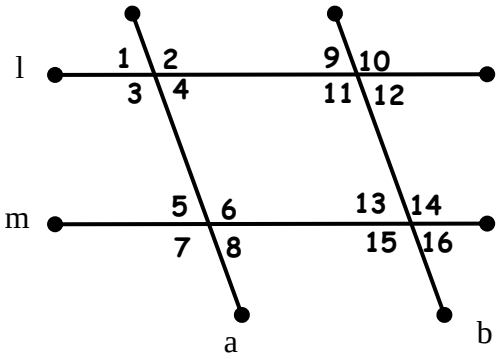
_____a) $\angle 2 \cong \angle 7$
_____b) $\angle 6 \cong \angle 14$
_____c) $\angle 5 \cong \angle 9$
_____d) $\angle 2 \cong \angle 12$
_____e) $\angle 3 \cong \angle 10$
_____f) $\angle 6$ supplements $\angle 10$
_____g) $\angle 8$ supplements $\angle 12$
_____h) $\angle 12 \cong \angle 13$



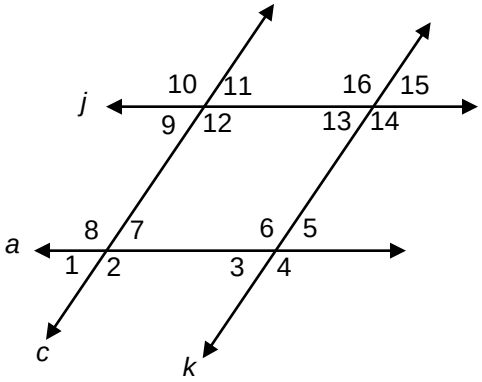
7. Given: a // b; $\angle 7 \cong \angle 11$
Prove: l // m



8. Given: l // m; $\angle 6$ and $\angle 12$ are supplementary
Prove: a // b



9. Given: $j \parallel a$, $\angle 9 \cong \angle 3$
Prove: $c \parallel k$



For #10 and #11, write the converse for each conditional statement:

10) If points lie on the same line, then they are collinear.

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11) If two angles are supplementary, then their sum is 180°.

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