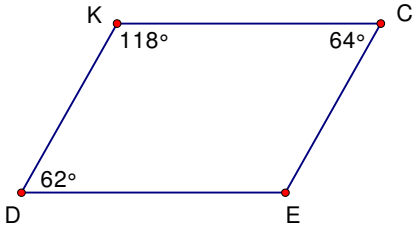
Name_____Date_____Color_____

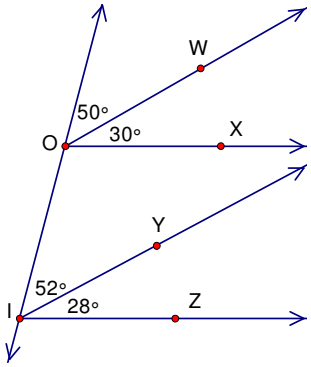
Proving Lines Parallel Geometry

State which segments (if any) are parallel.
State the postulate or theorem that justifies your answer.

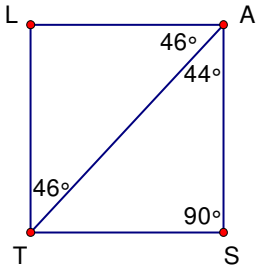
1.



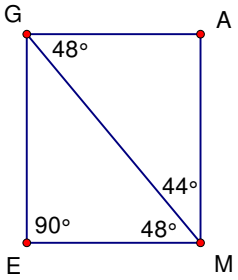
2.



3.

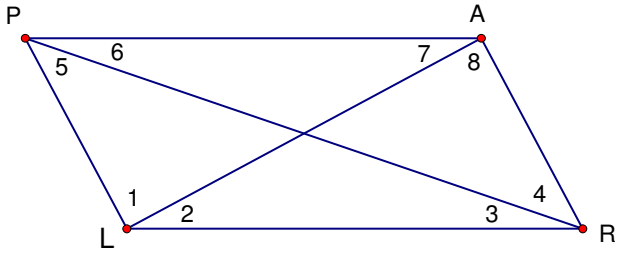


4.



In each exercise, some information is given. Use this information to name the segments that must be parallel. State the postulate or theorem that justifies your answer.
If there are no such segments, say so.

5. $m\angle 1 = m\angle 8$
6. $\angle 2 \cong \angle 7$
7. $\angle 5 \cong \angle 3$
8. $m\angle 5 = m\angle 4$
9. $m\angle 5 + m\angle 6 = m\angle 3 + m\angle 4$
10. $m\angle APL + m\angle PAR = 180$
11. $m\angle 1 + m\angle 2 + m\angle 5 + m\angle 6 = 180$



12. True or false?
    a. Two lines perpendicular to a third line must be parallel.
    b. In a plane, two lines perpendicular to a third line must be parallel.
    c. In a plane, two lines parallel to a third line must be parallel.
    d. Any two lines parallel to a third line must be parallel.