

Assignment

Write

Write the converse of each postulate or theorem.

1. Alternate Interior Angle Theorem:

"If two parallel lines are intersected by a transversal, then alternate interior angles are congruent."

2. Alternate Exterior Angle Theorem:

"If two parallel lines are intersected by a transversal, then alternate exterior angles are congruent."

3. Same-Side Interior Angle Theorem:

"If two parallel lines are intersected by a transversal, then same-side interior angles are supplementary."

4. Same-Side Exterior Angle Theorem:

"If two parallel lines are intersected by a transversal, then same-side exterior angles are supplementary."

Remember

If two parallel lines are intersected by a transversal, then:

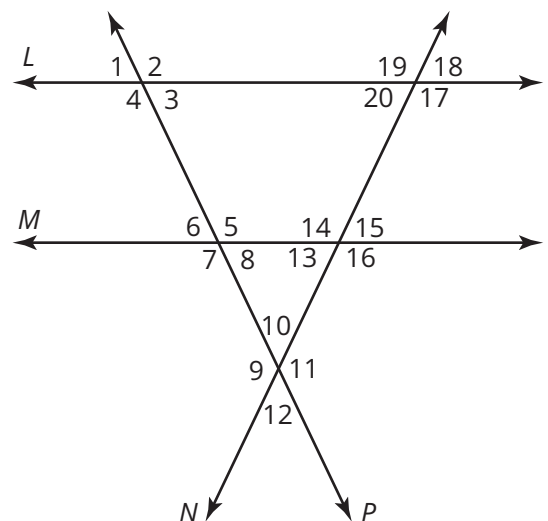
- Corresponding angles are congruent.
- Alternate interior angles are congruent.
- Alternate exterior angles are congruent.
- Same-side interior angles are supplementary.
- Same-side exterior angles are supplementary.

Practice

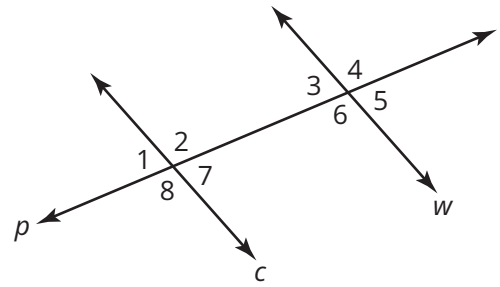
1. Consider the diagram shown. Determine which theorem leads to the conclusion that $c \parallel w$ for each statement.

- $\angle 3 \cong \angle 7$
- $\angle 5$ and $\angle 8$ are supplementary
- $\angle 4 \cong \angle 8$
- $\angle 2$ and $\angle 3$ are supplementary

Given: $\angle 2 \cong \angle 7 \cong \angle 19$, $m\angle 2 = 125^\circ$



2. Using the diagram in conjunction with postulates and theorems, determine the measure of all unknown angles.

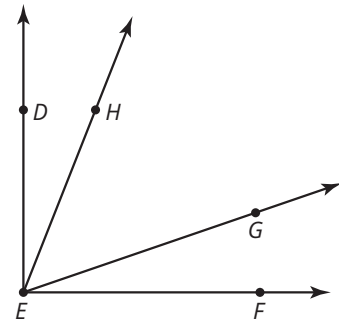


Stretch

Prove the conditional statement using any method you choose.

Given: $\angle DEG \cong \angle HEF$

Prove: $\angle DEH \cong \angle GEF$



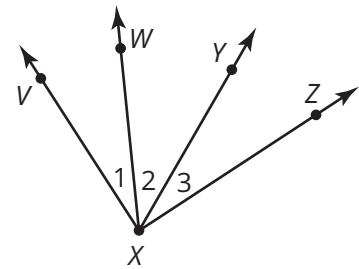
Review

- Identify the property that justifies the statement: If $m\angle A = m\angle B$, then $m\angle A - m\angle C = m\angle B - m\angle C$.
- Enter the reasons to complete the two-column proof.

Given: $m\angle 1 = m\angle 3$

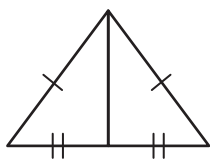
Prove: $m\angle WXZ = m\angle YXV$

Statement	Reasons
1. $m\angle 1 = m\angle 3$	1. Given
2. $m\angle WXZ = m\angle 3 + m\angle 2$	2.
3. $m\angle WXZ = m\angle 1 + m\angle 2$	3.
4. $m\angle 1 + m\angle 2 = m\angle YXV$	4.
5. $m\angle WXZ = m\angle YXV$	5. Substitution Property



3. State as many properties as you can about a rhombus.
4. Describe how to construct rhombus $JKLM$ given diagonal JL .
5. Determine whether each pair of triangles is congruent. If so, state whether they are congruent by SSS, SAS, or ASA. If not, explain why.

a.



b.

