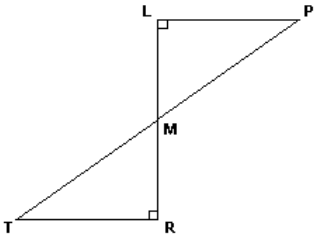
Geometry Review Sheet #6 Name _____

Date Due: **January 31, 2012**

1. In the diagram below: $\overline{RL} \perp \overline{LP}$, $\overline{LR} \perp \overline{RT}$, and M is the midpoint of $\overline{TP}$. Which statement could be used to prove $\Delta TMR \cong \Delta PML$?



(1) SAS ≅ SAS (3) HL ≅ HL

(2) AAS ≅ AAS (4) SSS ≅ SSS

2. Two parallel lines cut by a transversal can create all the following types of angles *except*

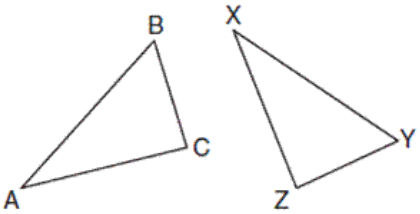
(1) Alternate interior angles

(2) Alternate exterior angles

(3) Corresponding angles

(4) Complementary angles

3. In the diagram below, $\Delta ABC \cong \Delta XYZ$.



Which two statements identify corresponding congruent parts for these triangles?

(1) $\overline{AB} \cong \overline{XY}$ and $\angle C \cong \angle Y$

(2) $\overline{AB} \cong \overline{YZ}$ and $\angle C \cong \angle X$

(3) $\overline{BC} \cong \overline{XY}$ and $\angle A \cong \angle Y$

(4) $\overline{BC} \cong \overline{YZ}$ and $\angle A \cong \angle X$

4. The complement of every acute angle *must* be

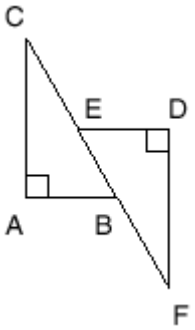
(1) an acute angle

(2) a right angle

(3) an obtuse angle

(4) a straight angle

5. In the accompanying diagram, $\overline{CA} \perp \overline{AB}$, $\overline{ED} \perp \overline{DF}$, $\overline{ED} \parallel \overline{AB}$, $\overline{CE} \cong \overline{BF}$, and, $\overline{AB} \cong \overline{ED}$.



Which statement would *not* be used to prove $\Delta ABC \cong \Delta DEF$?

(1) SAS ≅ SAS (3) HL ≅ HL

(2) AAS ≅ AAS (4) SSS ≅ SSS

6. In triangle ABC, if altitude AD is drawn to side BC, which of the following must be true?

(1) $\angle ADB \cong \angle ADC$ (3) $\triangle ADB \cong \triangle ADC$

(2) $\overline{BD} \cong \overline{DC}$ (4) $\angle B \cong \angle C$

7. In $\triangle ABC$, an exterior angle at A measures 40°. Which is the *longest* side of the triangle?

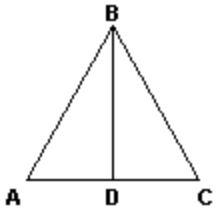
(1) $\overline{AB}$

(2) $\overline{AC}$

(3) $\overline{BC}$

Short Answer
Please show all work on a separate piece of paper and/or graph paper.

8. In ΔABC, $\overline{BD}$ is both the median and the altitude to $\overline{AC}$. Write a two-column proof to prove: $\overline{BA} \cong \overline{BC}$?



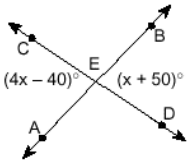
9. Given triangle *ABC* has vertices at (-2, 4), (-2,- 4) and (0,- 2), respectively, find the circumcenter of the triangle.

10. If line *L* does not intersect plane *P* but is not parallel to plane *P*, then line *L* is _____ to plane *P*.

11. Give a counterexample to the statement "If *x* is divisible by 8, then it is divisible by 6."

13. Write the converse of "If two sides of a triangle are congruent, then the triangle is isosceles"?

14. In the accompanying diagram, $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ intersect at *E*.



If m∠*AEC* = 4*x* - 40 and m∠*BED* = *x* + 50, find the number of degrees in m∠*AEC*.

15. **Given**: Isosceles ΔABC with

$\overline{AB} \cong \overline{AC}$, $\overline{DE} \perp \overline{BC}$, $\overline{FG} \perp \overline{BC}$ and $\overline{BG} \cong \overline{EC}$

Prove: $\overline{BD} \cong \overline{FC}$