

**GEOMETRY**

**CUM. REVIEW #7 (Units 1 - 7)**

**PART I:** Write the answer of your choice in the space provided. Provide work that justifies your choice in the space provided. Each item is worth 2 points. A correct choice without appropriate justification will receive 1 point.

**Work Space for Justification**

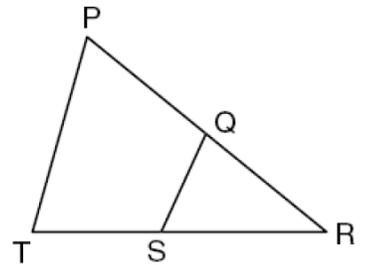
- \_\_\_\_\_ 1. In three-dimensional space, two planes are parallel and a third plane intersects both of the parallel planes. The intersection of the planes is a
- [A] plane                      [B] pair of parallel lines  
 [C] point                      [D] pair of intersecting lines

- \_\_\_\_\_ 2. In the diagram of  $\triangle ABC$ ,  $\overline{AB}$  is extended through  $D$ ,  $m\angle CBD = 30$ , and  $\overline{AB} \cong \overline{BC}$ . What is the measure of  $\angle A$ ?
- [A]  $15^\circ$   
 [B]  $30^\circ$   
 [C]  $75^\circ$   
 [D]  $150^\circ$



- \_\_\_\_\_ 3. If the lengths of two sides of a triangle are 4 and 10, what could be the length of the third side?
- [A] 6      [B] 8      [C] 16      [D] 14

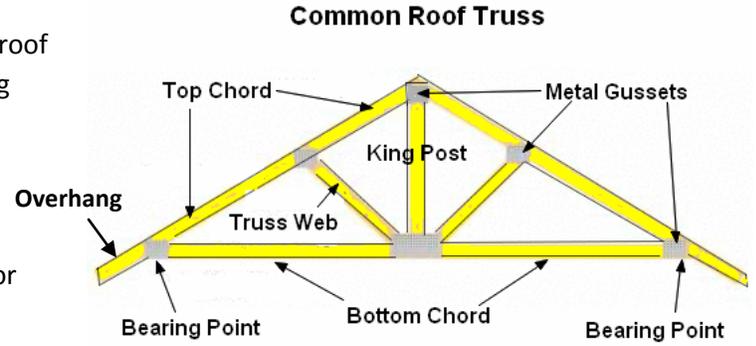
- \_\_\_\_\_ 4. In the diagram of  $\triangle PRT$ ,  $Q$  is a point on  $\overline{PR}$ ,  $S$  is a point on  $\overline{TR}$ ,  $\overline{QS}$  is drawn, and  $\angle RPT \cong \angle RSQ$ . Which criteria justifies the conclusion that  $\triangle PRT \sim \triangle SRQ$ ? (Show work on diagram).
- [A] SAS    [B] SSS    [C] AA    [D] ASA



- \_\_\_\_\_ 5. What is the slope of a line perpendicular to the line whose equation is  $5x + 3y = 8$ ?
- [A]  $-\frac{3}{5}$       [B]  $\frac{3}{5}$       [C]  $\frac{5}{3}$       [D]  $-\frac{5}{3}$

**PART II:** For each question in this section you must show ALL WORK, including formulas, substitutions, drawings, etc. Each question is worth 4 credits. If a solution is given with no work, only one credit will be given.

6. A construction company is building the trusses for the roof of a house. They have anchored the 5 foot vertical king post at the midpoint of the bottom horizontal chord measuring 24 feet, ensuring perpendicularity in all directions.



- A) Determine the length in feet of top chord needed for each side for a two foot overhang.

- B) The pitch of the roof is the angle between the top chord and the king post. Explain how the company knows that the pitch of the roof will be the same for both sides.

**PART II:** For each question in this section you must show ALL WORK, including formulas, substitutions, drawings, etc. Each question is worth 6 credits. If a solution is given with no work, only one credit will be given.

7. The diagonals of a rhombus ABCD measure 16 and 30 inches and intersect at point E.

- A) Draw a diagram, including important relationships.

- B) Determine the perimeter of the rhombus.

- C) If  $\triangle AEB \sim \triangle FGH$  with a FH=34, state the following:

Similarity Ratio: \_\_\_\_\_ Perimeter Ratio: \_\_\_\_\_

Scale Factor: \_\_\_\_\_ Area Ratio: \_\_\_\_\_