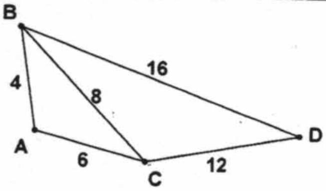
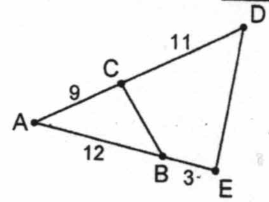
Unit 4A Review – Honors Math 2 **Name:** ____________________

If the triangles in 1 – 3 can be proved similar, (1) Complete the similarity statement and (2) Tell which theorem or postulate you would use. If they cannot be proved similar then write "None."

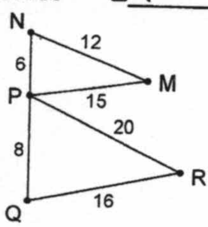
1. $\Delta ABC \sim \Delta$ CBD by PPP



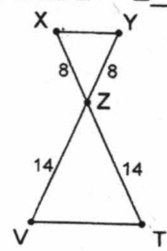
2. $\Delta ABC \sim \Delta$ ADE by PAP



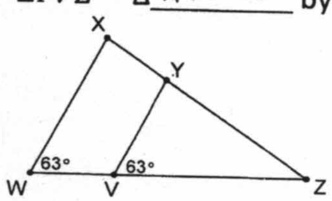
3. $\Delta NMP \sim \Delta$ PRQ by PPP



4. $\Delta XYZ \sim \Delta$ TV Z by PAP

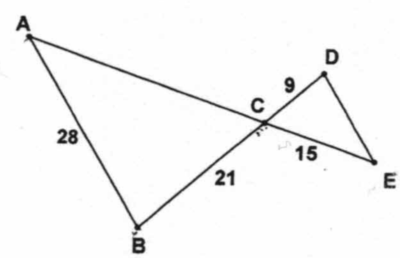


5. $\Delta YVZ \sim \Delta$ XWZ by AA



6. $\Delta BAC \sim \Delta DEC$

$\frac{BC}{DC} = \frac{21}{9} = \frac{7}{3}$



a. What is the scale factor of ΔBAC to ΔDEC? $\frac{7}{3}$

b. Find AC. 35

$\frac{7}{3} = \frac{AC}{15}$

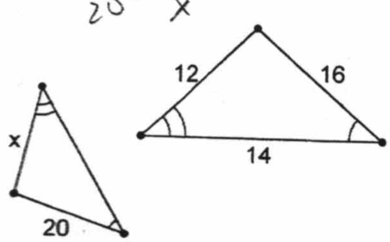
c. Find DE. 12

$\frac{7}{3} = \frac{28}{DE}$

Find the value of x.

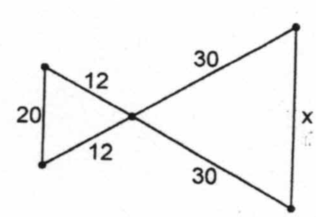
$\frac{16}{20} = \frac{12}{x}$

7. x = 15



8. x = 50

$\frac{12}{30} = \frac{20}{x}$



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9. Midsegment of a Triangle:

   a. The midsegment of a triangle joins the ___midpoint___ of two sides of a triangle.

   b. The midsegment is ___parallel___ to the third side and is ___$\frac{1}{2}$___ the length of the third side.

10. The sum of the measures of the angles of a triangle is ___180___.

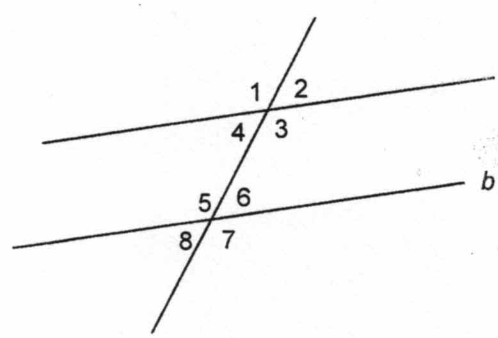
11. The exterior angle of a triangle is equal to ___sum___ of the ___opposite interior ∠'s___ of the triangle.

12. Triangle Proportionality Theorem and its converse:

   a. A line that is parallel to one side of a triangle divides the other two sides ___proportionally___.

   b. If a line intersects 2 sides of a triangle so that it divides those 2 sides proportionally, then it is ___parallel to the 3rd side___.

Use the diagram to answer 13 – 14.



13. Name the type of each given angle pair.

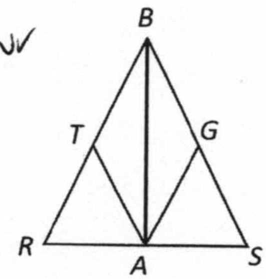
   a. $\angle 3$ *and* $\angle 5$
   Alt Int

   b. $\angle 1$ *and* $\angle 7$
   Alt exterior

   d. $\angle 8$ *and* $\angle 6$
   vertical

   e. $\angle 4$ *and* $\angle 3$
   suppl.

For each problem, *use the definitions and postulates we have covered* to ***state a valid conclusion*** for each set of givens and ***give a reason*** for your conclusion. Good conclusions should *use all the information in the givens*. The reason should be either a brief statement of the definition used or the name of the postulate used. For problems #1 - 8, use the figure below. Treat each problem as *separate* (the givens for one problem do *not* apply to the following problems). You *may* assume $\overline{BTR}$, $\overline{BGS}$, and $\overline{RAS}$ for all eight problems.



1. Given: $\overline{AB}$ bisects $\angle RBS$.

   Conclusion/Reason: ∡RBA ≅ ∡ ABS   Def ∡ bisector

2. Given: $\overline{RA} \cong \overline{AS}$.

   Conclusion/Reason: RA = AS   Def of congruence

3. Given: $\angle BAT \cong \angle BAG$, $\angle RAT \cong \angle SAG$

   Class disussion

   Conclusion/Reason: ______

4. Given: $\overline{BR} \cong \overline{BS}$

   Conclusion/Reason: BR = BS   Def of congruence (unit 4B)

5. Given: $\overline{BR} \cong \overline{BS}$, $\overline{TR} \cong \overline{GS}$.

   class discussion

   Conclusion/Reason: ______

6. Given: $\angle RAT \cong \angle ATR$, $\angle ATR \cong \angle TRA$

   Conclusion/Reason: ∡RAT ≅ ∡TRA   transitive

7. Given: $\angle BAR$ is a right angle.

   Conclusion/Reason: m∡ BAR = 90   Def right ∡

8. Note: draw $\overline{TG}$ on the diagram and label its intersection with $\overline{AB}$ as point *M*.

   Given: $\overline{AB}$ bisects $\overline{TG}$ at *M*.

   Conclusion/Reason: $\overline{TM} \cong \overline{MG}$ Def segment bisector