Good luck to: _____ Block: A2 A3 A4 B2 B3 B4 Date: _____ ID: A

Geometry Test 11 Mr. Holcomb 2008/2009
South Park or The Simpsons?

True/False
Indicate whether the statement is true or false.

____ 1. (1 point) If an acute angle of a right triangle is congruent to an acute angle of another right triangle, then the triangles are similar.

____ 2. (1 point) All equilateral triangles are congruent.

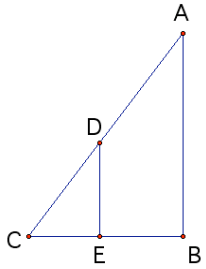
____ 3. (1 point) If two triangles are similar, then they are congruent.

____ 4. (1 point) All isosceles triangles with a vertex angle of 50° are similar.

____ 5. (1 point) If two triangles are congruent, then they are similar.

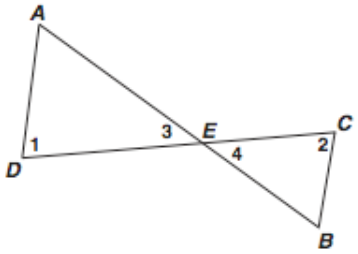
Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 6. (2 points) Which of the following facts would be sufficient to prove that $\triangle ABC \sim \triangle DBE$?



a. $\overline{CE} \cong \overline{BE}$
c. $\overline{AB} \parallel \overline{DE}$
b. $\overline{AC} \perp \overline{BC}$
d. $\angle A \cong \angle B$

____ 7. (2 points) Given: $\overline{AB}$ and $\overline{CD}$ intersect at point E; $\angle 1 \cong \angle 2$



Which theorem or postulate can be used to prove $\triangle AED \sim \triangle BEC$

a. AA
c. ASA
b. SSS
d. SAS

Name: _____ **ID: A**

Problem

8. (5 points) Solve the proportion $\frac{5}{x} = \frac{3}{(x-2)}$

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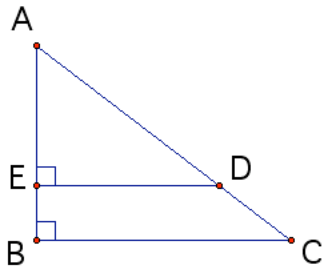
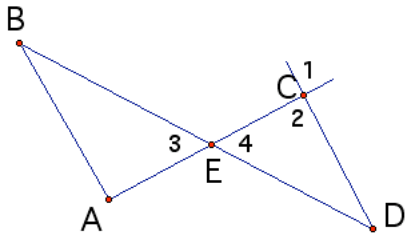
9. (5 points) Find the area of ΔABC using the information given in the diagram and the fact that $AE = 6$, $EB = 4$, and $ED = 9$. Justify by showing clear work.



10. (10 points) Complete the following proof:
Given: $\overline{AB} \parallel \overline{CD}$
Prove: $\Delta ABE \sim \Delta CDE$



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Total Points Earned =

Name: _____ **ID: A**

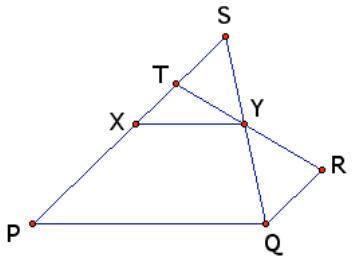
11. (4 points) Complete:

a. Given: $\Delta STY \sim \Delta QRY$

$$\frac{ST}{\_\_} = \frac{TY}{RY}$$

b. Given: $\Delta TYS \sim \Delta QYR$

$$\frac{TY}{SY} = \frac{QY}{\_\_}$$



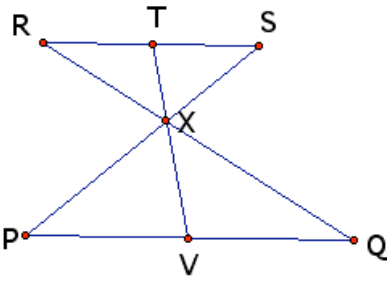
12. (4 points) Complete the similarity statements so that the proportions would be true.

a. $\frac{RS}{PQ} = \frac{RX}{QX}$

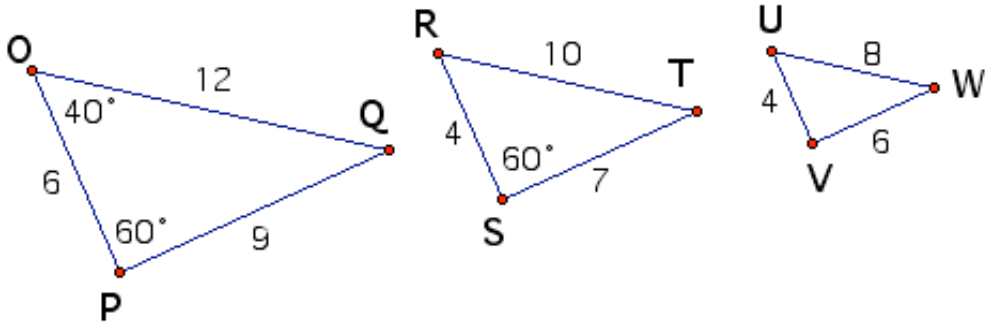
$\Delta RS\_\_ \sim \Delta Q\_\_\_\_$

b. $\frac{RT}{TX} = \frac{VQ}{VX}$

$\Delta R\_\_\_\_ \sim \Delta QX\_\_$



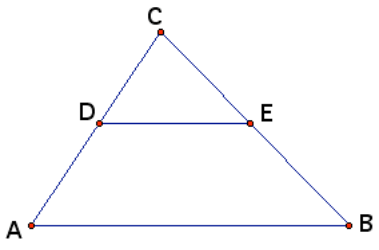
13. (6 points) Determine which two of the three given triangles are similar. Find the scale factor to go from the larger to the smaller for the pair.



14. (6 points) In the figure below, $\overline{DE} \parallel \overline{AB}$.

a. If $CD = 5, AD = 10$, and $AB = 18$, find DE.

b. If $AD = DC$, and $DE = 12$, find AB.



Total Points Earned =

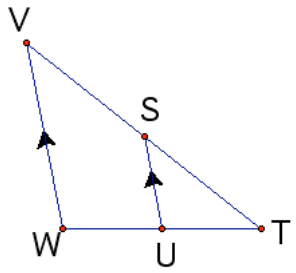
15. (5 points) Solve the following by factoring. Justify with clear and complete work. Simplify your final answer.

$$x^2 + 10x + 25 = 24$$

16. (6 points) Fill in the following to make a true statement.

a. $x^2 + \_\_x + 36 = (\_\_ + \_\_)^2$ b. $x^2 - 18x + \_\_\_ = (\_\_ + \_\_)^2$

17. (6 points) Complete the statement of proportionality based on the diagram below.



$$\frac{VT}{ST} = \frac{}{SU} = \frac{}{}$$

18. (5 points) What is the area of the entire figure? Justify with clear work.