Name _____ Date _____ Pd ____

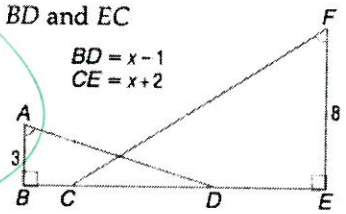
Geometry GT Quest Review

1. What are the postulate(s)/theorem(s) that provide shortcuts to proving triangle similarity? Name and describe them.

AA similarity post. SSS simil. thm.
SAS similarity thm.

2. For the following, identify the similar triangles. Then find x and the measures of the indicated sides.

a.



$BD = \frac{9}{5}$

$CE = \frac{24}{5}$

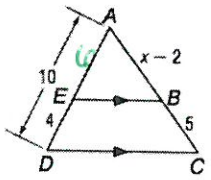
$\frac{3}{8} = \frac{x-1}{x+2}$

$3x + 6 = 8x - 8$

$14 = 5x$

$\frac{14}{5} = x$

b. AB



$AB = \frac{15}{2}$

$\frac{6}{4} = \frac{x-2}{5}$

$\frac{3}{2} = \frac{x-2}{5}$

$15 = 2x - 4$

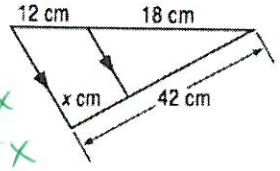
$19 = 2x$

$x = 19/2$

3. Describe, in your own words, the Triangle proportionality Theorem and the Triangle Midsegment Theorem.

4. For the following, apply your knowledge of similar triangles, the triangle proportionality theorem and/or the triangle midsegment theorem to find x and the measure of the indicated sides.

a. Find x



$\frac{12}{18} = \frac{x}{42-x}$

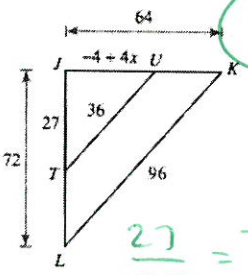
$\frac{2}{3} = \frac{x}{42-x}$

$84 - 2x = 3x$

$84 = 5x$

$x = \frac{84}{5}$

b. Find x and JU



$\frac{27}{72} = \frac{-4+4x}{64}$

$\frac{3}{8} = \frac{-4+4x}{64}$

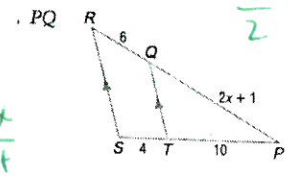
$192 = -32 + 32x$

$224 = 32x$

$7 = x$

$JU = 24$

c. Find x and PQ



$\frac{10}{4} = \frac{2x+1}{6}$

$\frac{5}{2} = \frac{2x+1}{6}$

$30 = 4x + 2$

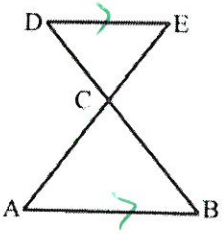
$28 = 4x$

$x = 7$

$PQ = 15$

5. Prove the following.

a.



Given: $\overline{AE}$; $\overline{DB}$; $\overline{AB} \parallel \overline{DE}$

Prove: $\frac{DC}{BC} = \frac{DE}{BA}$

S	R
1. $\overline{AB} \parallel \overline{DE}$	1. given
2. $\angle A \cong \angle E$, $\angle D \cong \angle B$	2. alt. int $\angle$s thm.
3. $\triangle ACB \sim \triangle ECD$	3. AA similarity
4. $\frac{DC}{BC} = \frac{DE}{BA}$	4. Def of similar polygons.