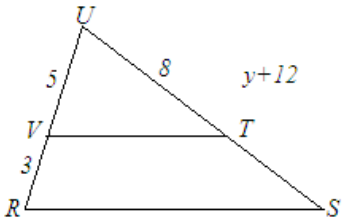
First name: _____ Last name: _____ ID: _____

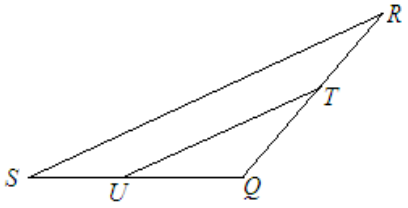
Similar Triangles 2 Homework

1. In the figure below, if RS // VT, and US = y + 12, find y.



2. In ΔQRS shown in the figure,

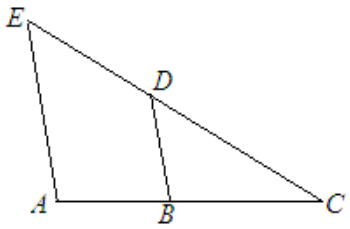
1) If $UT \parallel SR$, QT = 5, TR = 4, and US = 6, find QU.



2) If TQ = x + 1, TR = x – 1, QU = 10 and QS = 15, find x.

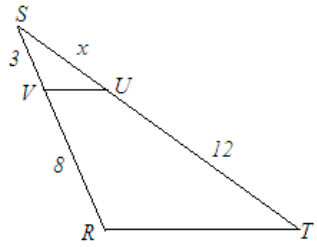
3. In ΔABC shown in the figure,

1) If AB = 5, ED = 8, BC = 11, and DC = x – 2, find x so that BD // AE.

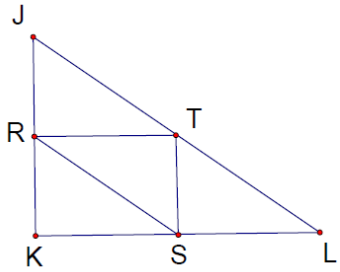


2) If AB = 4, BC = 7, ED = 5, and EC = 13.75, determine whether BD // AE.

4. In ΔRST, RT // VU, SV = 3, VR = 8, and UT = 12. Find *SU*.



5. Use the diagram of Δ*JKL* where R, S, and T are midpoints of the sides, RK = 3, KS = 4, and *JK* ⊥ *KL*



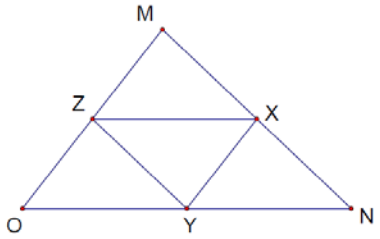
a) RS = _____

b) JK = _____

c) RT = _____

d) Find the perimeter of Δ*JKL*.

6. Use the diagram of ΔMNO where X, Y, and Z are midpoints of the sides.
a) Which lines are parallel?

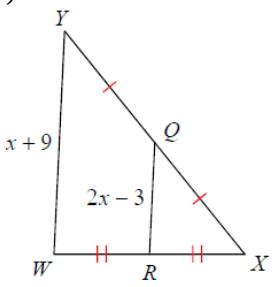


b) If $m\angle MON = 48^{\circ}$, then $m\angle MZX =$ _____

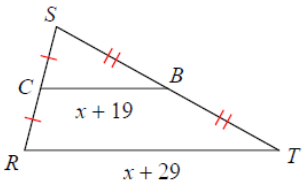
because _____

7. Solve for x.

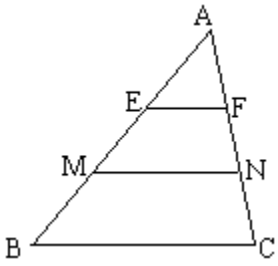
a)



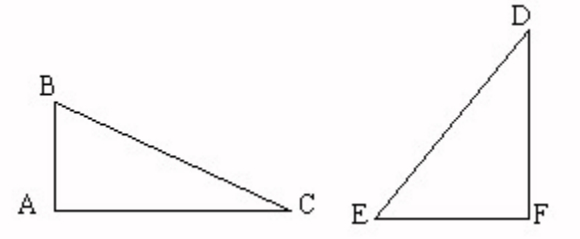
b)



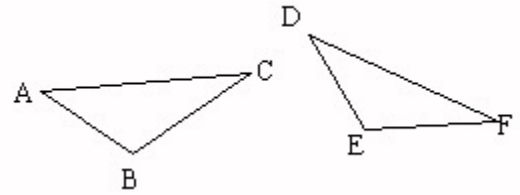
8. In ΔABC, BC = 1, E, M and F, N trisect AB, AC respectively. Find EF + MN.



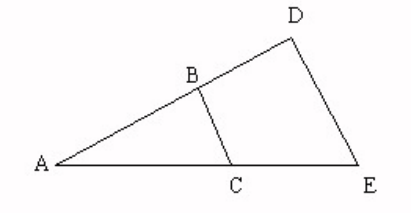
9. $\angle C \cong \angle D$, $\angle A \cong \angle F$. The length of the sides of ABC are 155, 165, and 170. The length of the smallest side of FED is 124, what is the length of the longest side of FED?



10. $\angle B \cong \angle E$, $\angle C \cong \angle F$. The perimeter of smaller triangle ABC is 184. The lengths of two corresponding sides on the triangles are 67 and 335. What is the perimeter of DEF?

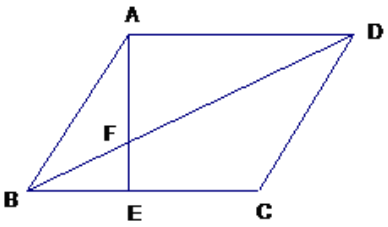


11. $\angle ACB \cong \angle E$, $\angle ABC \cong \angle D$. The perimeter of smaller triangle ABC is 54. The lengths of two corresponding sides on the triangles are 12 and 24. One side of ADE is 30. What is the length of the corresponding side on ABC?

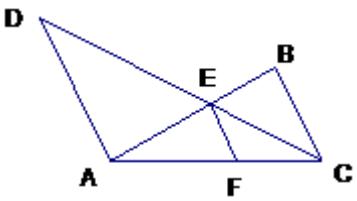


Challenge Problems

1. In the figure below, parallelogram $ABCD$, point E in on BC and $\frac{BE}{EC}=\frac{3}{4}$ AE intersects BD at F. if $BF = 6$cm, determine $\frac{BE}{DA}$ and DF.



2. In the figure below, *AD* //BC and AB, CD intersect at E. EF is drawn to parallel AD and intersects AC at F.



a) Find all similar triangles.
b) If AD = 20, CB = 16, find EF

3. In trapezoid ABCD, diagonals AC, BD intersect at M. AD∥BC∥MN, AD = 3, BC = 6，determine MN.