

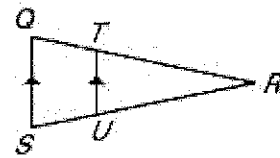
6-6: Use Proportionality Theorems

WORKSHEET

Name: _____

Triangle Proportionality Theorem:

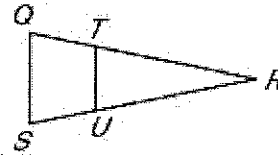
If a line parallel to one side of a triangle intersects the other two sides, then it divides the two sides proportionally.



$$\text{If } \overline{TU} \parallel \overline{QS}, \text{ then } \frac{RT}{TQ} = \frac{RU}{US}$$

Converse of the Triangle Proportionality Theorem:

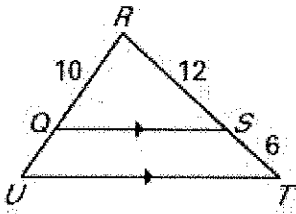
If a line divides two sides of a triangle proportionally, then it is parallel to the third side.



$$\text{If } \frac{RT}{TQ} = \frac{RU}{US}, \text{ then } \overline{TU} \parallel \overline{QS}$$

Example 1:

a.) Find the length of \overline{QU}



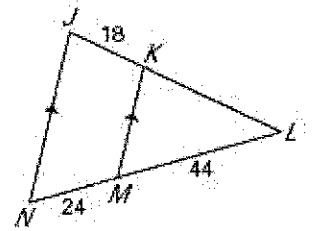
$$\frac{12}{6} = \frac{10}{QU}$$

$$\overline{QU} = 5$$

b.) Find the length of \overline{KL}

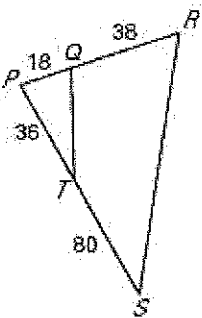
$$\frac{24}{44} = \frac{18}{KL}$$

$$\overline{KL} = 33$$



Example 2:

a.) Determine whether $\overline{QT} \parallel \overline{RS}$.

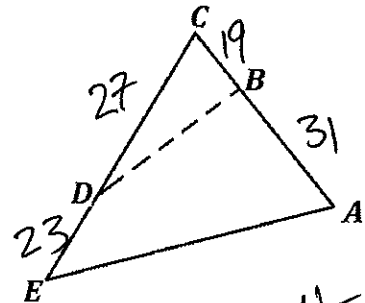


$$\frac{18}{38} = \frac{36}{80}$$

$$1440 \neq 1368$$

Not \parallel

b.) Given $AB = 31\text{mm}$, $BC = 19\text{mm}$, $CD = 27\text{mm}$, and $DE = 23\text{mm}$. Determine whether $\overline{BD} \parallel \overline{AE}$.



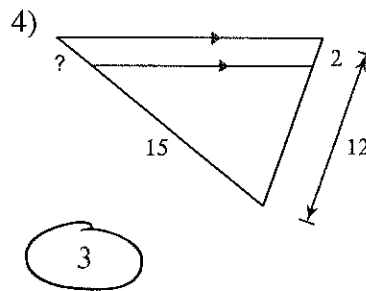
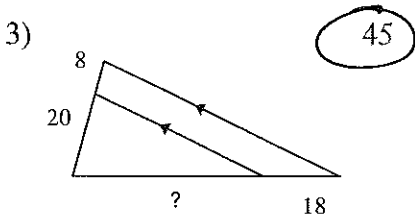
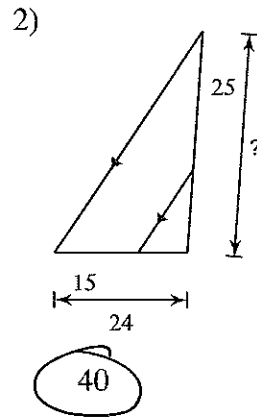
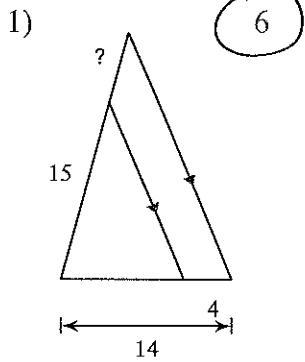
$$\frac{27}{23} = \frac{19}{31}$$

Not \parallel

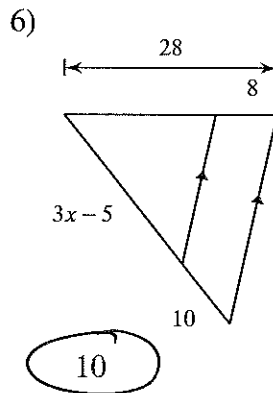
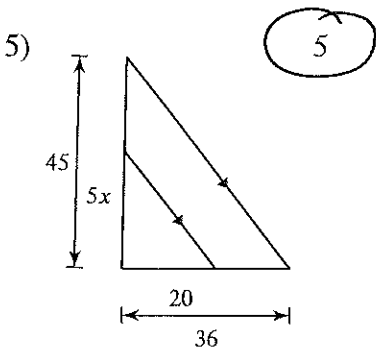
$$837 \neq 437$$

Proportional Parts in Triangles and Parallel Lines

Find the missing length indicated.



Solve for x.



Find the missing length indicated.

