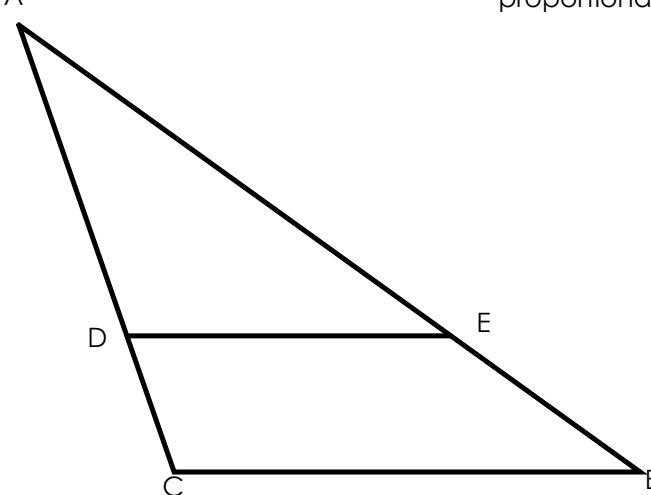


# 3.2 Side Splitter Theorem

Objective: Students will use the side splitter theorem to solve some hairy problems

**Side Splitter Theorem**

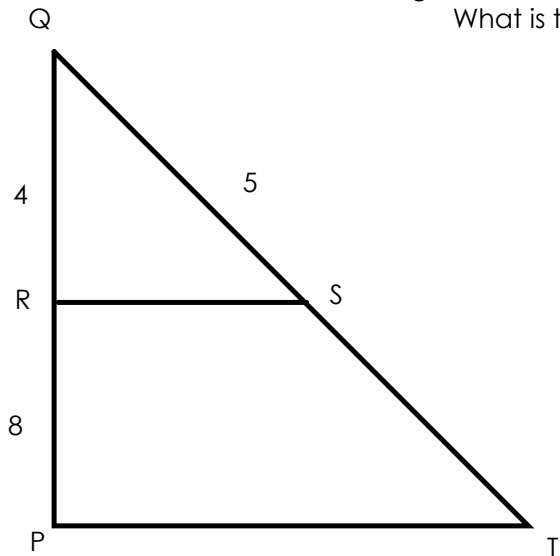
A \_\_\_\_\_ line through a triangle splits the \_\_\_\_\_ of the triangle into proportional pieces.



If  $\overline{DE} \parallel \overline{CB}$

— = —

Triangle PQT with  $\overline{RS} \parallel \overline{PT}$  is shown below.  
What is the length of  $\overline{ST}$ ?

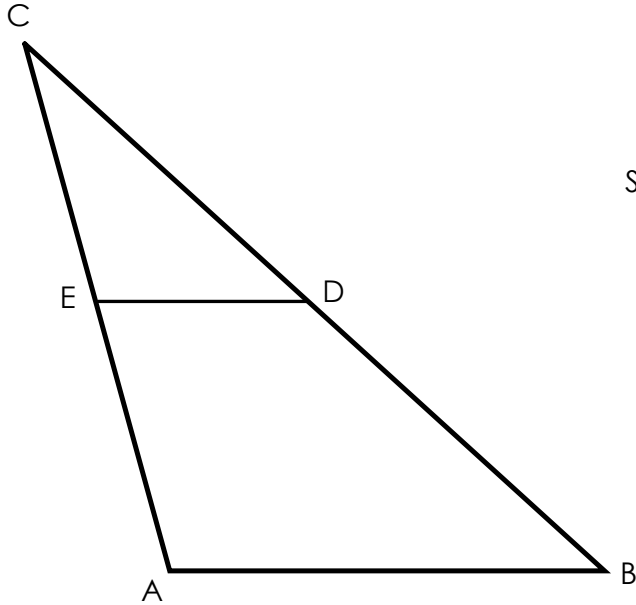


Step 1: Set Up Ratio's  
Step 2: Cross Multiply  
Step 3: Solve

Set up ratio's

● → \_\_\_\_\_ = \_\_\_\_\_

In the diagram below of triangle ABC,  $\overline{ED} \parallel \overline{AB}$ , AE = 14 inches, AC = 21 inches, and BD = 6 inches. Find, to the nearest tenth of an inch, the length of CD.

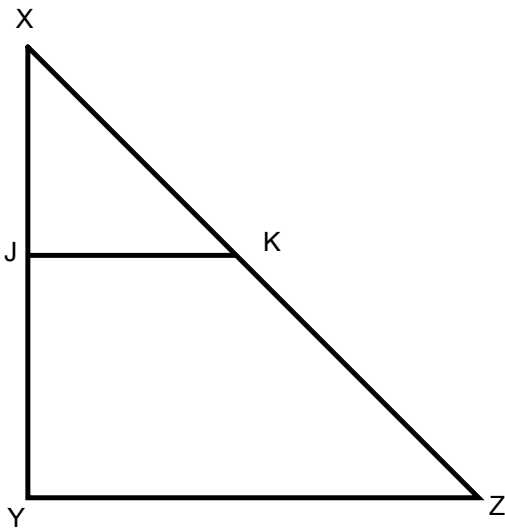


Step 1: Set Up Ratio's  
 Step 2: Cross Multiply  
 Step 3: Solve

Set up ratio's

\_\_\_\_\_ = \_\_\_\_\_

In the triangle below JK  $\parallel$  YZ. If XY = 18, XJ = 4 and JK = 10, find the length of YZ.



## Independent Practice

In the  $\triangle ABC$ ,  $\overline{AC} \parallel \overline{DE}$ .  
What is the length of  $\overline{BE}$ ?

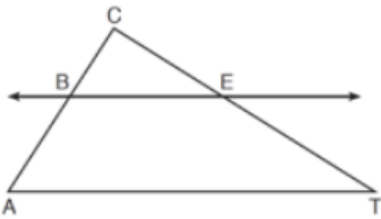
In triangle  $UST$ ,  $\overline{VP} \parallel \overline{US}$ . Find the length of  $\overline{UV}$

In the  $\triangle EFD$ ,  $\overline{DG} = 6$ ,  $\overline{GE} = 18$ ,  $\overline{EH} = 48$   
and  $\overline{GH} \parallel \overline{DF}$ .  
What is the length of  $\overline{HF}$ ?

In the diagram of  $ABC$  shown below,  $\overline{DE} \parallel \overline{AC}$ .  
If  $\overline{AB} = 20$ ,  $\overline{AD} = 16$ , and  $\overline{ED} = 24$ , what is the  
length of  $\overline{AC}$ ?

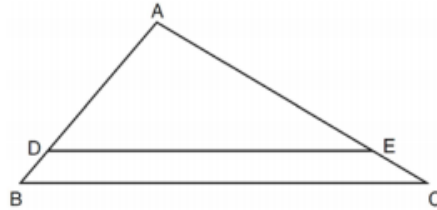
Can You Handle THESE?!  
Be strong, young Jedi.

In the diagram below of  $\triangle ACT$ ,  $\overleftrightarrow{BE} \parallel \overline{AT}$ .



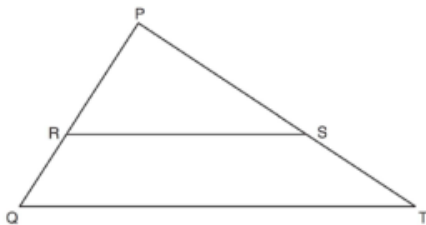
If  $\overline{CB} = 3$ ,  $\overline{CA} = 10$ , and  $\overline{CE} = 6$ , what is the length of  $\overline{ET}$ ?

In the diagram of  $\triangle ABC$  shown below,  $\overline{DE} \parallel \overline{BC}$ .



If  $\overline{AB} = 10$ ,  $\overline{AD} = 8$ , and  $\overline{AE} = 12$ , what is the length of  $\overline{EC}$ ?

Triangle  $PQT$  with  $\overline{RS} \parallel \overline{QT}$  is shown below.



If  $\overline{PR} = 12$ ,  $\overline{RQ} = 8$ , and  $\overline{PS} = 21$ , what is the length of  $\overline{PT}$ ?

In  $\triangle ABC$ , point  $D$  is on  $\overline{AB}$ , and point  $E$  is on  $\overline{BC}$  such that  $\overline{DE} \parallel \overline{AC}$ . If  $\overline{DB} = 2$ ,  $\overline{DA} = 7$ , and  $\overline{DE} = 3$ , what is the length of  $\overline{AC}$ ?