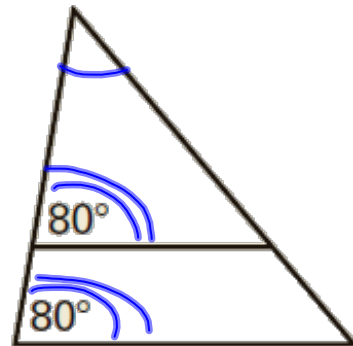


## Warm Up

1. Give the theorem or postulate that justifies why the triangles are similar.

AA                      AA  
 SSS  
 SAS

Solve:



2.  $\frac{2}{5} = \frac{x-3}{12}$

$$24 = 5(x-3)$$

$$24 = 5x - 15$$

$$39 = 5x \quad x = 7.8$$

3.  $\frac{2}{4} = \frac{12-x}{x}$        $\frac{4}{8}$

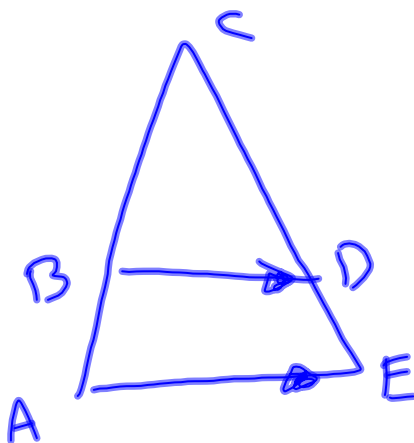
$$2x = 4(12-x)$$

$$2x = 48 - 4x$$

$$6x = 48 \quad x = 8$$

## 6-6 Proportionality Theorems

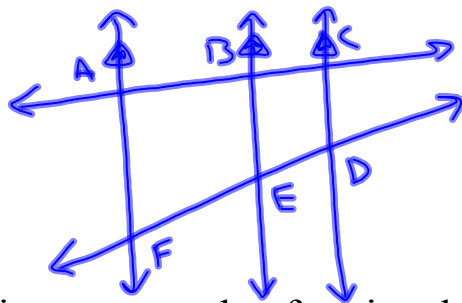
Triangle Proportionality Theorem -



if  $\overline{AE} \parallel \overline{BD}$

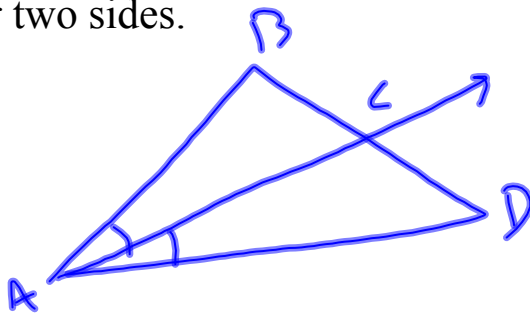
then  $\frac{AB}{BC} = \frac{DE}{CD}$

If three parallel lines intersect two transversals, then they divide the transversals proportionally.



$$\frac{AB}{BC} = \frac{EF}{FD}$$

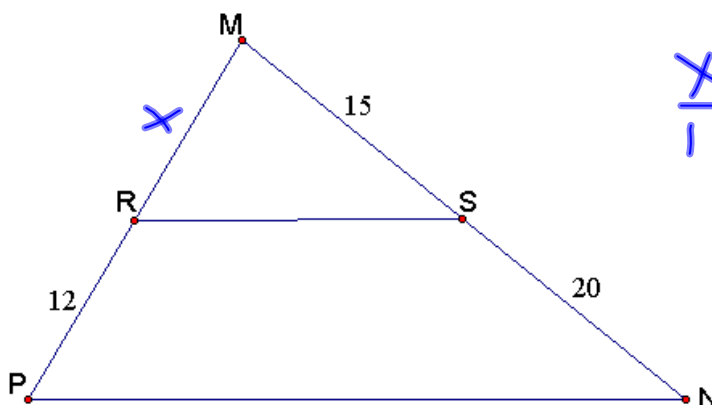
If a ray bisects an angle of a triangle, then it divides the opposite side into segments whose lengths are proportional to the lengths of the other two sides.



$$\frac{BC}{CD} = \frac{AB}{AD}$$

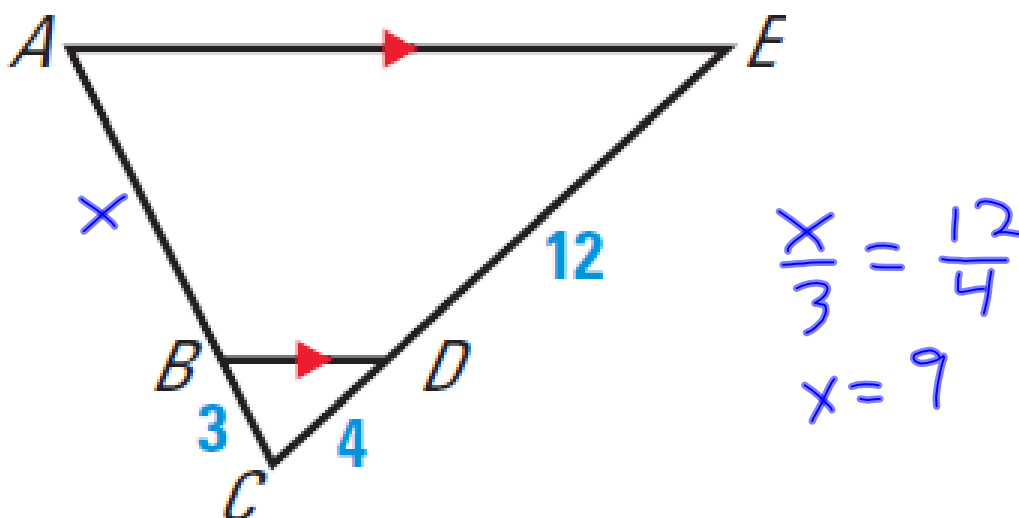
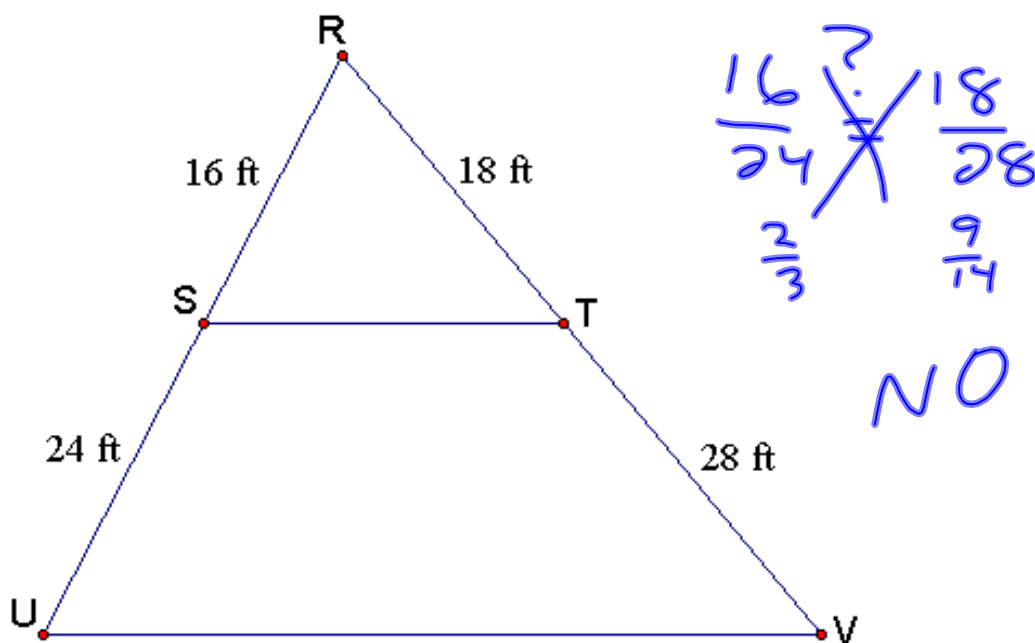
Ex 1 In the diagram,  $\overline{RS} \parallel \overline{PN}$

What is the length of  $\overline{RM}$

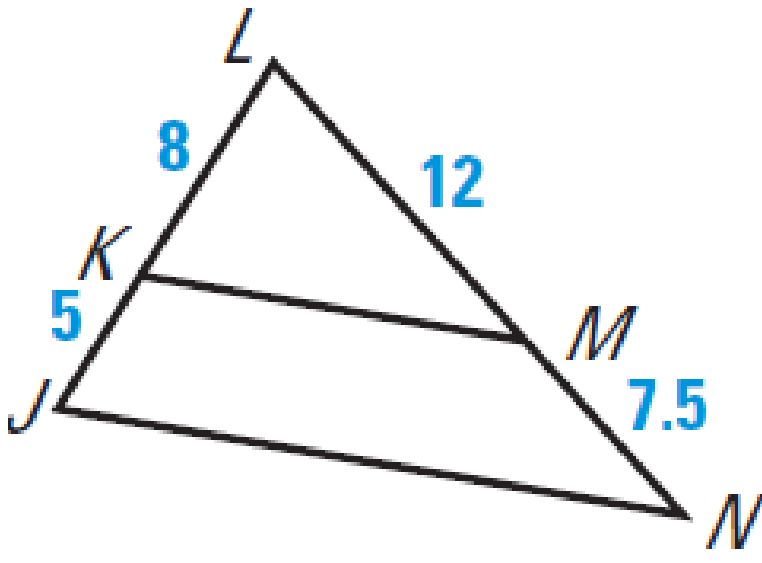


$$\frac{x}{12} = \frac{15}{20}$$

$$x = 9$$

Ex. 2 Find  $AB$ .Ex 3 Is  $\overline{ST} \parallel \overline{UV}$ ?

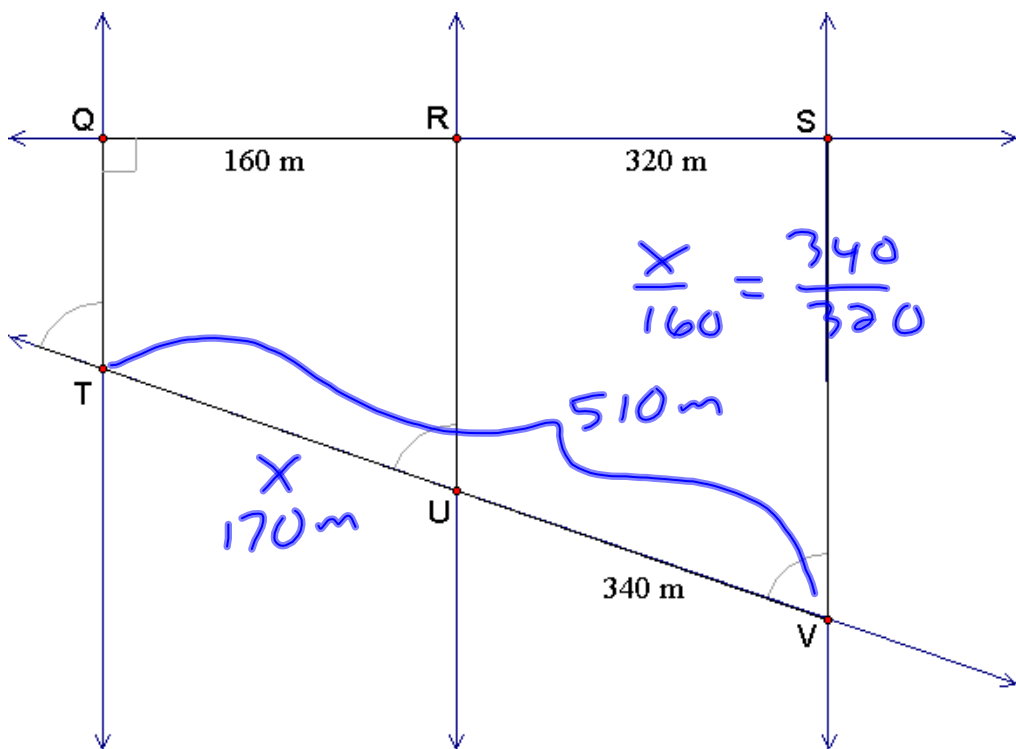
Ex. 4 Is  $\overline{KM} \parallel \overline{JN}$



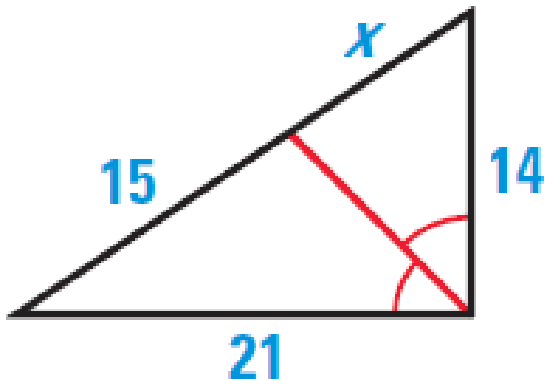
$$\frac{5}{8} \stackrel{?}{=} \frac{7.5}{12}$$

Yes

Ex 5 Find  $TV$



Ex. 6 Solve for x.



$$\frac{x}{14} = \frac{15}{21}$$

$$x = 10$$

Ex 7 In the diagram,  $\angle ABD \cong \angle CBD$  and  $AC = 40$ .

Find DC

