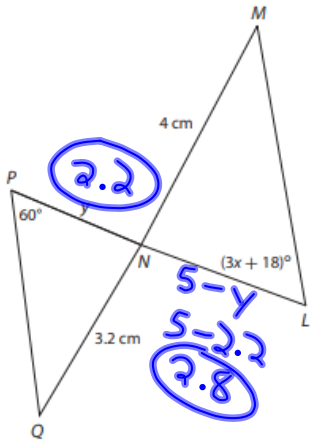
Bell Work - from homework

16. In the diagram, $\triangle NPQ \sim \triangle NLM$ and $PL = 5$.

a. Find the value of x.

$3x+18=60$ $-18\ -18$ $\quad \frac{3x}{3}=\frac{42}{3}$ $\quad x=14$

b. Find the lengths NP and NL.



$\frac{5-y}{y}=\frac{4}{3.2}$

$3.2(5-y)=4y$

$16-3.2y=4y$ $\quad 2.2=y$

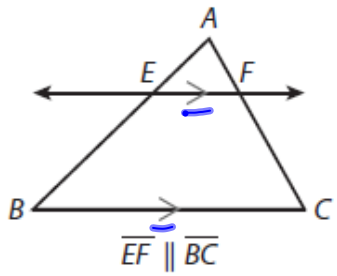
$+3.2y\ \ +3.2y$

$\frac{16}{7.2}=\frac{7.2y}{7.2}$

12.1 Triangle Proportionality Theorem

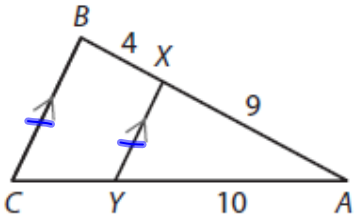
Prove theorems about triangles

Triangle Proportionality Theorem

Theorem	Hypothesis	Conclusion
If a line parallel to a side of a triangle intersects the other two sides, then it divides those sides proportionally.	 $\overline{EF} \parallel \overline{BC}$	$\frac{AE}{EB} = \frac{AF}{FC}$

Find the length of each segment.

1. CY

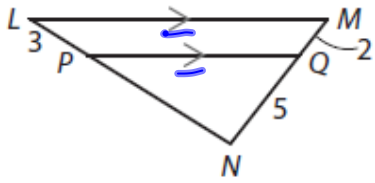


$\frac{CY}{10} = \frac{4}{9}$

$\frac{9CY}{9} = \frac{40}{9}$

$CY = \frac{40}{9}$

2. PN



$\frac{PN}{3} = \frac{5}{2}$

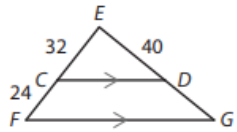
$\frac{2PN}{2} = \frac{15}{2}$

$PN = 7.5$

Your Turn

Find the length of each segment.

5. $\overline{DG}$

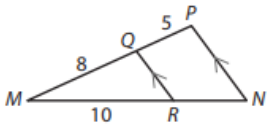


$\frac{DG}{40} \times \frac{24}{32}$

$DG = 30$

$\frac{32DG}{32} = \frac{960}{32}$

6. $\overline{RN}$



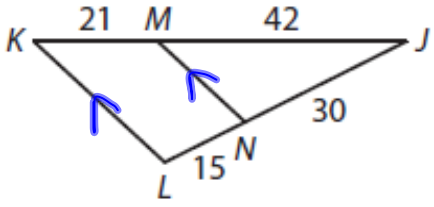
$RN = 6.25$

$\frac{RN}{10} \times \frac{5}{8}$

$\frac{8RN}{8} = \frac{50}{8}$

Verify that the line segments are parallel.

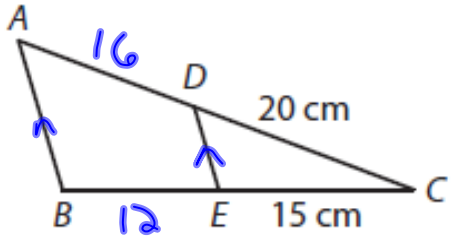
1. MN and KL



$\frac{21}{42} \times \frac{15}{30}$

$630 = 630$ ✓

2. DE and AB (AC=36cm BC=27cm)



$\frac{16}{20} \times \frac{12}{15}$

$240 = 240$ ✓