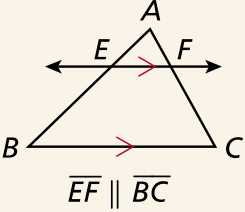
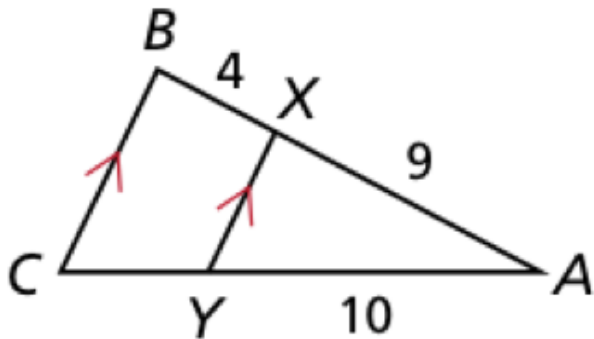


Jadwin-Geometry-8th Period-Off Site Learning Packet Day 9
 Applying Properties of Similar Triangles

Theorem 7-4-1 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.		$\frac{AE}{EB} = \frac{AF}{FC}$

Example: Find CY .

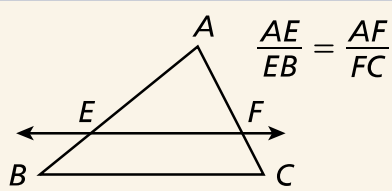


$$\frac{4}{9} = \frac{CY}{10}$$

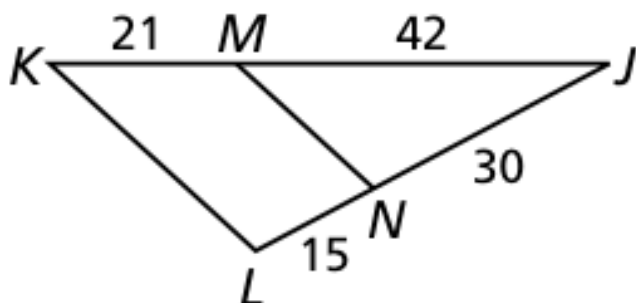
$$9CY = 40$$

$$CY = 4.\bar{4}$$

Theorem 7-4-2 Converse of the Triangle Proportionality Theorem

THEOREM	HYPOTHESIS	CONCLUSION
If a line divides two sides of a triangle proportionally, then it is parallel to the third side.	 $\frac{AE}{EB} = \frac{AF}{FC}$	$\overleftrightarrow{EF} \parallel \overline{BC}$

Example: Verify that $\overline{MN} \parallel \overline{KL}$.

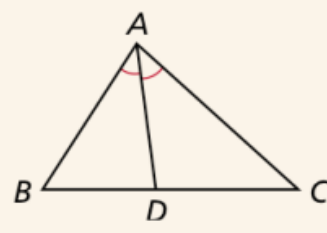


$$\frac{KM}{MJ} = \frac{21}{42} = \frac{1}{2}$$

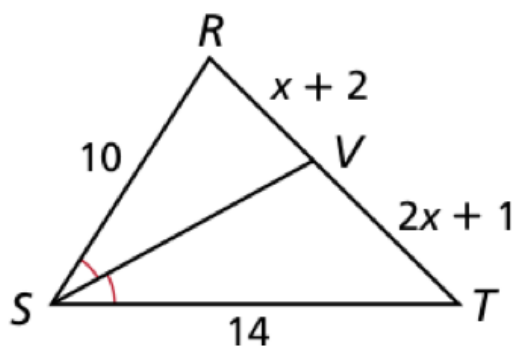
$$\frac{LN}{NJ} = \frac{15}{30} = \frac{1}{2}$$

Since $\frac{KM}{MJ} = \frac{LN}{NJ}$, $\overline{MN} \parallel \overline{KL}$

Theorem 7-4-4 Triangle Angle Bisector Theorem

THEOREM	HYPOTHESIS	CONCLUSION
An angle bisector of a triangle divides the opposite side into two segments whose lengths are proportional to the lengths of the other two sides. ($\Delta \angle$ Bisector Thm.)		$\frac{BD}{DC} = \frac{AB}{AC}$

Example: Find RV and VT.



$$\frac{RV}{VT} = \frac{RS}{ST}$$

$$\begin{aligned} \frac{x+2}{2x+1} &= \frac{10}{14} \\ 14x + 28 &= 20x + 10 \\ 28 &= 6x + 10 \\ 18 &= 6x \\ 3 &= x \end{aligned}$$

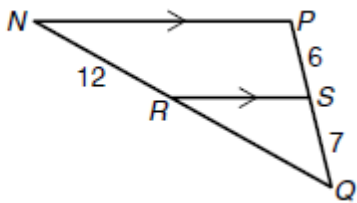
$$RV = 3 + 2 = 5$$

$$VT = 2(3) + 1 = 7$$

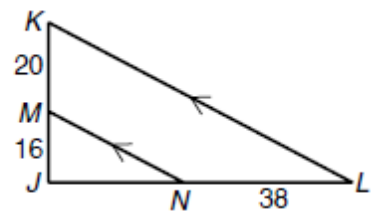
Jadwin-Geometry-8th Period-Off Site Learning Packet Day 9
Applying Properties of Similar Triangles

Find the length of each segment.

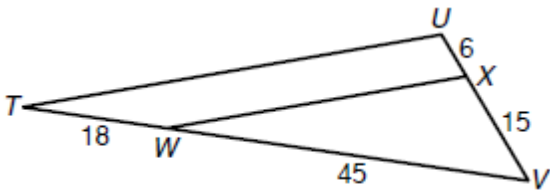
1. \overline{RQ}



2. \overline{JN}

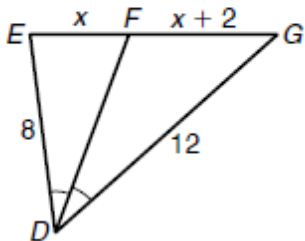


3. Show that \overline{TU} and \overline{WX} are parallel.



Find the length of each segment.

4. \overline{EF} and \overline{FG}



5. \overline{RV} and \overline{TV}

