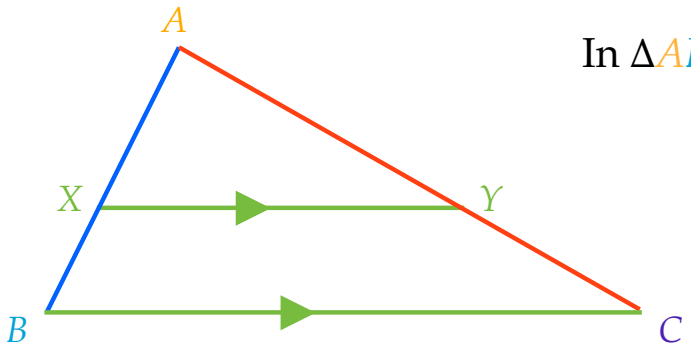
Triangle Proportionality and Its Converse

Name _____

Date _____ Period _____

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



In ΔABC if $\overline{XY} \parallel \overline{BC}$,

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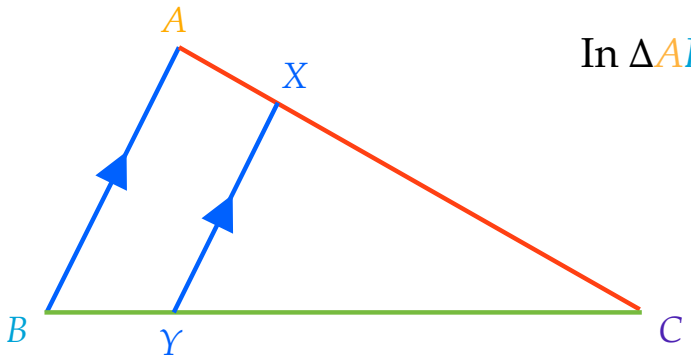

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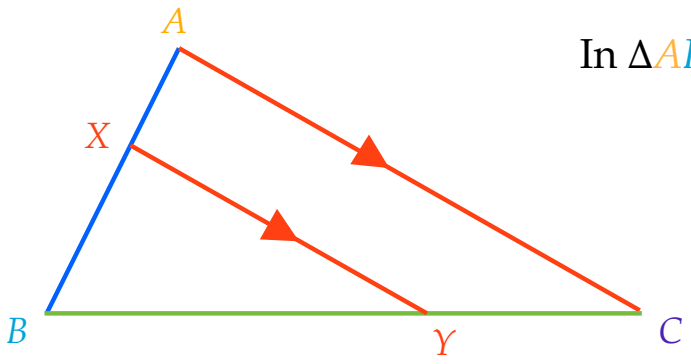
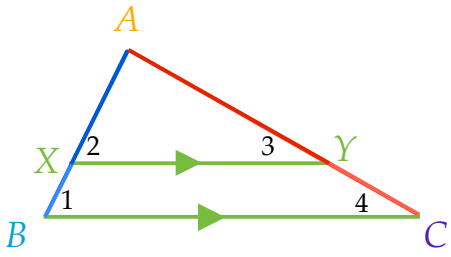


In ΔABC if $\overline{XY} \parallel \overline{AC}$,

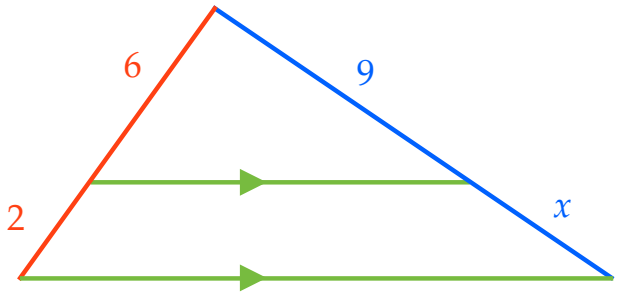
Statements	Reasons

Given: ΔABC and $\overline{XY} \parallel \overline{BC}$

Prove: $\frac{BX}{XA} = \frac{YC}{YA}$



Use the Side Splitter Theorem to solve for x.



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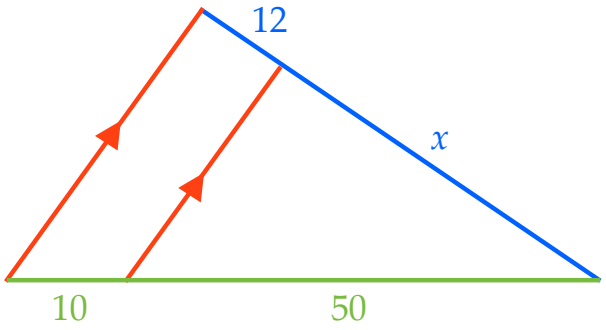

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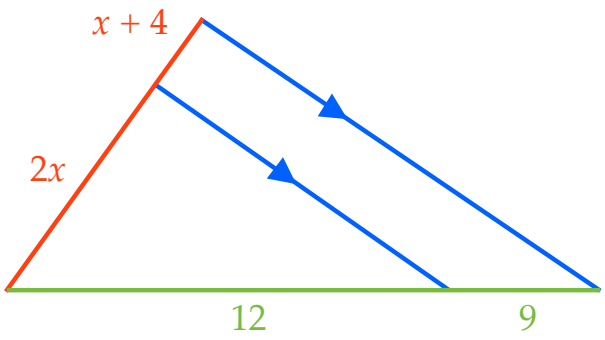
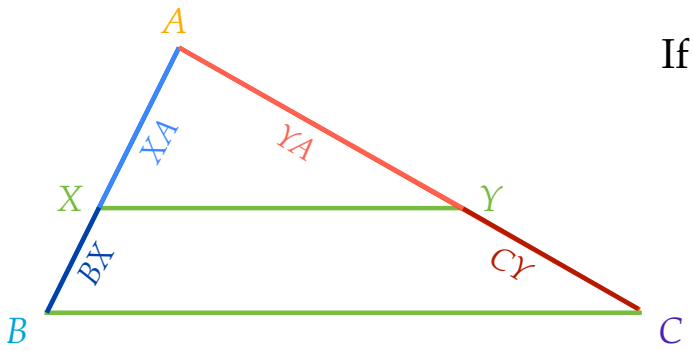
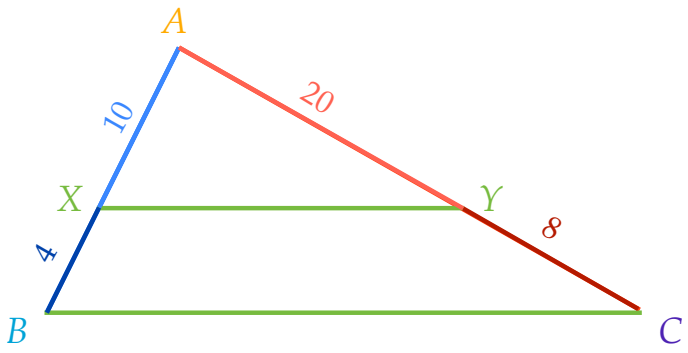


Converse: If a line inside a triangle intersects two sides and divides those sides into corresponding sides of proportional lengths, then the line is parallel to the third side.



If $\frac{BX}{XA} = \frac{CY}{YA}$

Determine if $\overline{XY} \parallel \overline{BC}$



Determine if $\overline{XY} \parallel \overline{AB}$