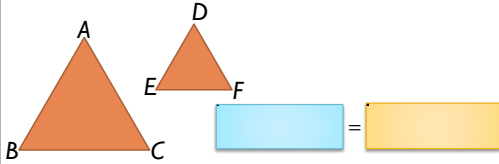


§7-5 Parts of Similar Triangles

- Proportional Perimeters Theorem

◦ If $\triangle ABC \sim \triangle DEF$ then the ratio of their perimeters is equal to the ratio of their corresponding sides.



§7-5 Parts of Similar Triangles

- Example

◦ If $\triangle LMN \sim \triangle QRS$, $QR = 40$, $RS = 41$, $SQ = 9$, and $LM = 9$, find the perimeter of $\triangle LMN$.

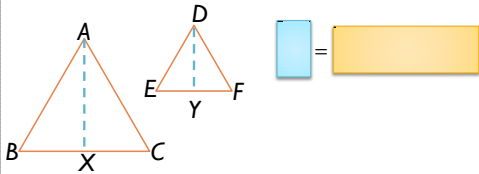
- Draw and label a picture!

- Use the Proportional Perimeters Theorem to set up a proportion!

§7-5 Parts of Similar Triangles

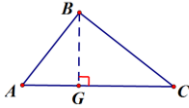
- Theorem

◦ If $\triangle ABC \sim \triangle DEF$ then the measures of their corresponding altitudes are in the same ratio as the measures of their corresponding sides.

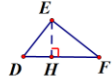


§7-5 Parts of Similar Triangles

- Example
 - In the figure, $\triangle ABC \sim \triangle DEF$. If \overline{BG} is an altitude of $\triangle ABC$, and \overline{EH} is an altitude of $\triangle DEF$, then complete the following.



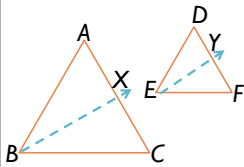
$$\frac{BG}{EH} = \frac{?}{DE}$$



$$\frac{BG}{EH} = \frac{BC}{?}$$

§7-5 Parts of Similar Triangles

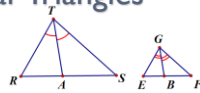
- Theorem
 - If then the measures of the to the



$$\square = \square$$

§7-5 Parts of Similar Triangles

- Proof of the theorem.
 - Given: $\triangle RTS \sim \triangle EGF$
 - \overline{TA} is an angle bisector of $\angle RTS$
 - \overline{GB} is an angle bisector of $\angle EGF$
 - Prove: $\frac{TA}{GB} = \frac{RT}{EG}$



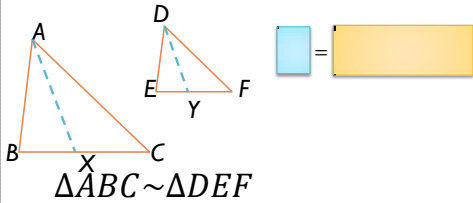
Statement	Reason

Continued on board

§7-5 Parts of Similar Triangles

• Theorem

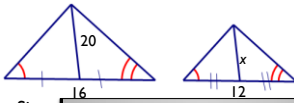
- If then the measures of the to the



§7-5 Parts of Similar Triangles

• Example

- Find the value of x .



- Since we know that the to the
- Therefore,