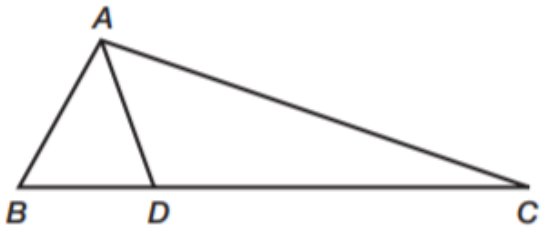
Name:_____Date:_____Period:_____

Triangle Similarity Relationships

The **Angle Bisector/Proportional Side Theorem** states: "A of an in a triangle divides the into two segments whose lengths are in the same as the lengths of the sides to the ."



Measure the following sides to complete the *proportion* below:

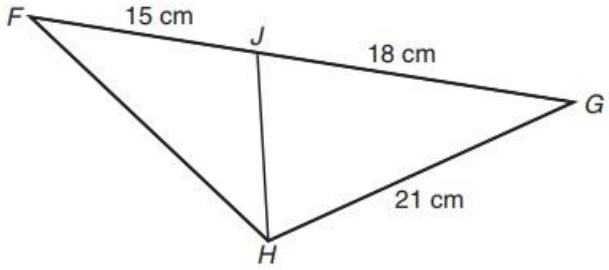
$$\frac{AB}{AC} = \frac{BD}{CD}$$

___ = ___

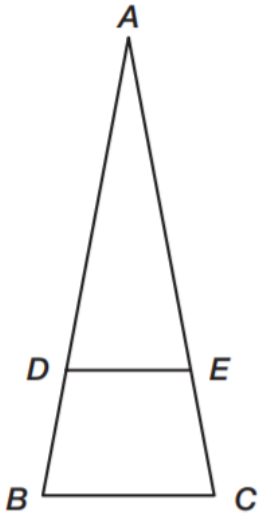
What do you notice about the two ratios?

Can you find the missing length?

$\overline{HJ}$ bisects $\angle H$. Calculate HF.



The **Triangle Proportionality Theorem** states: "If a line to one side of a intersects the other , then it the sides ."



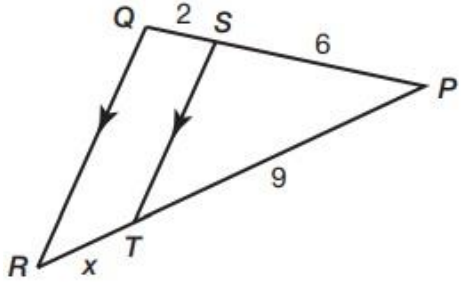
Measure the following sides to complete the *proportion* below:

$$\frac{BD}{DA} = \frac{CE}{EA}$$

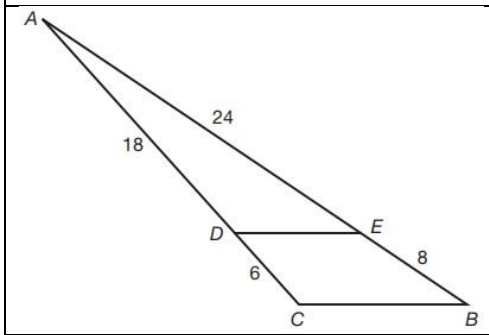
___ = ___

What do you notice about the two ratios?

Can you find the missing length?



The **Converse of the Triangle Proportionality Theorem** states: "If a line two of a triangle , then it is to the side."



Use the given sides to complete the *proportion* below:

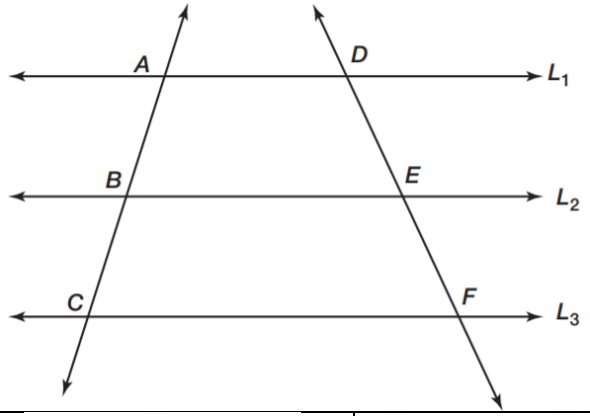
$$\frac{AD}{DC} = \frac{AE}{EB}$$

$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$

What do you notice about the two ratios?

What does that mean?

The **Proportional Segments Theorem** states: "If parallel lines intersect two , then they the transversals ."



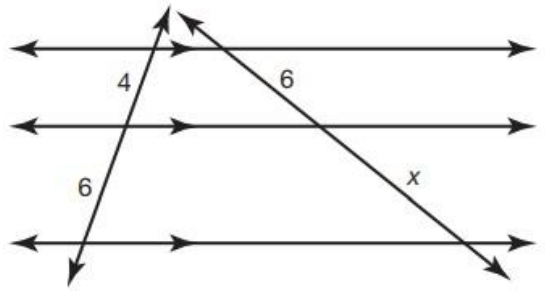
Measure the following sides to complete the *proportion* below:

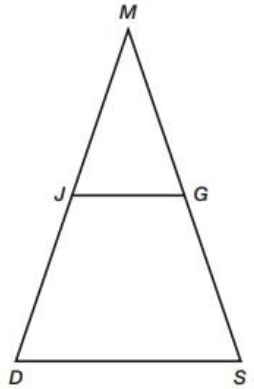
$$\frac{AB}{BC} = \frac{DE}{EF}$$

$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$

What do you notice about the two ratios?

Can you find the missing length?





The **Triangle Midsegment Theorem** states: "The of a triangle is to the third of the triangle and is the measure of the side of the triangle."

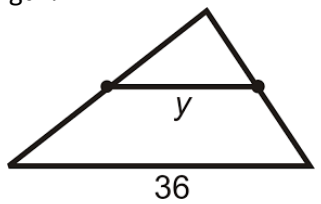
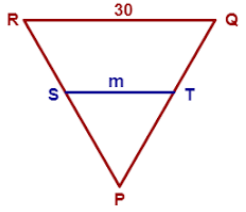
Measure the following sides to complete the *proportion* below:

$$\overline{JG} =$$

$$\overline{DS} =$$

What do you notice about the two sides?

Can you find the missing length?



Can you find the missing length?