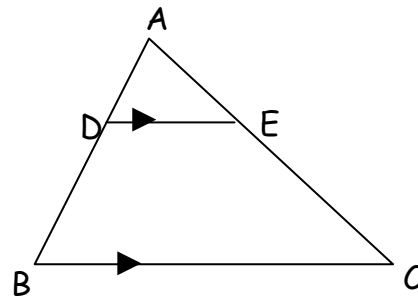
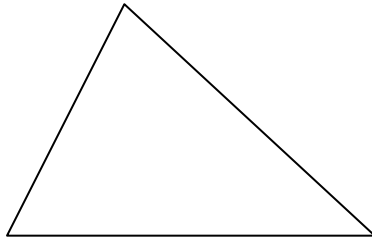
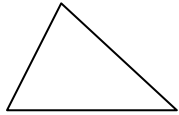


6.3 Proportionality Theorems
Pre-AP Geometry

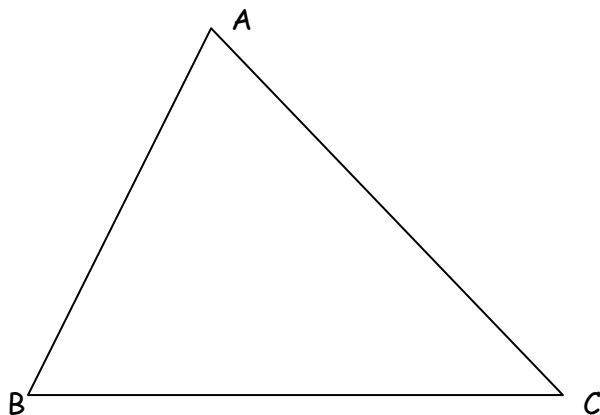
Name _____
Period _____ Date _____

EXPLORE/EXPLAIN

Using the figure to the right, label each of the vertices of the two triangles below and fill in the extended proportion.



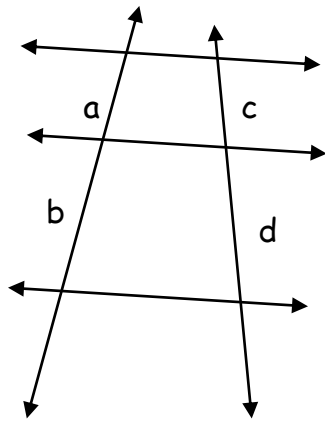
$$\frac{AD}{AC} = \frac{DE}{AC} = \frac{DE}{AC}$$



1. Draw a point on \overline{AB} . Label the point D.
2. Draw a parallel line. Draw a line through D that is parallel to \overline{BC} . Label the intersection of the line and \overline{AC} as point E.
3. Using a ruler or the edge of your formula chart, measure the following segments:
AD = _____ DB = _____ AE = _____ EC = _____
4. Calculate the following ratios:

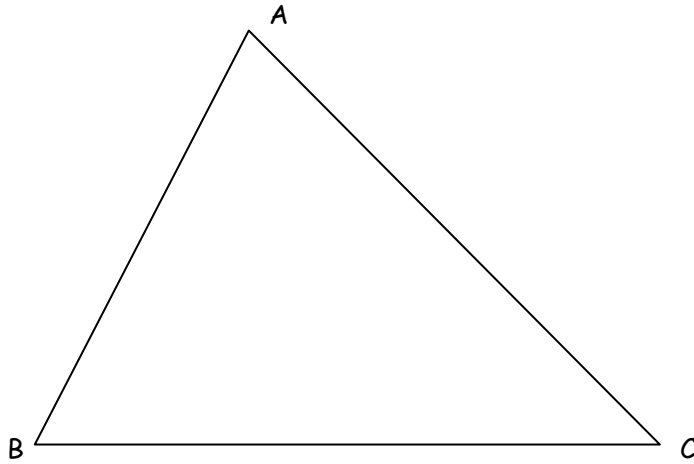
$$\frac{AD}{DB} = \text{_____} \quad \text{and} \quad \frac{AE}{EC} = \text{_____}$$

Conjecture: If a segment is parallel to one side of a triangle and intersects the other two sides, then



Complete the following ratios:

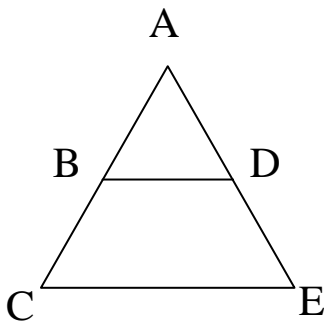
$$\frac{a}{c} = \underline{\hspace{2cm}} \quad \text{or} \quad \frac{a}{b} = \underline{\hspace{2cm}}$$



1. Draw a ray that bisects $\angle ABC$ and passes through \overline{AC} . Label the point of intersection D.
2. Using a ruler or protractor, measure the following segments:
 $BA = \underline{\hspace{2cm}}$ $BC = \underline{\hspace{2cm}}$ $AD = \underline{\hspace{2cm}}$ $CD = \underline{\hspace{2cm}}$
3. Calculate the following ratios:

$$\frac{BA}{AD} = \underline{\hspace{2cm}} \quad \text{and} \quad \frac{BC}{CD} = \underline{\hspace{2cm}}$$

\overline{BD} is a midsegment



Conjectures: