

Angle Bisectors in a Triangle

ID: 8892

Name _____

Class _____

In this activity, you will explore:

- *The angle bisector of an angle.*
- *The proportional relationship that occurs when an angle bisector in a triangle divides the opposite side into two parts.*

Use this document to record your answers.

Problem 1 – The Angle Bisector Theorem

1. What were the measures of the two angles created by your angle bisector ($\angle BAX$ and $\angle CAX$)?

2. Record some of the measurements after moving point X:

Distance from X to side \overline{AB}	Distance from X to side \overline{AC}

3. Complete the conjecture:

Any point on the angle bisector of an angle is _____ from the sides of the angle.

Problem 2 – One Angle Bisector in a Triangle

4. Record some of the measurements after moving a vertex of $\triangle ABC$:

AB	AC	BD	CD

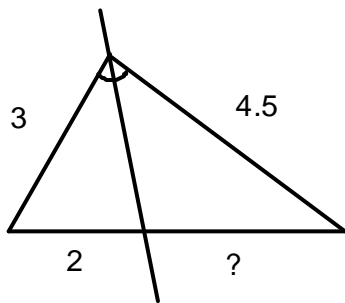
5. Identify a pair of ratios that are equal. Drag a vertex of the triangle to confirm your conjecture.

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

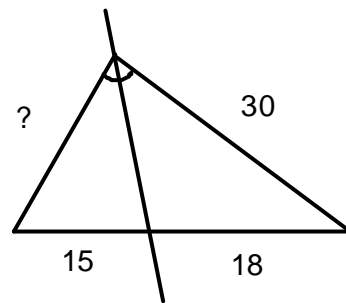
Apply The Math

Use your proportion from question 5 above to find the missing values for each:

6.



7.



8. Create your own problem and solve it below.

