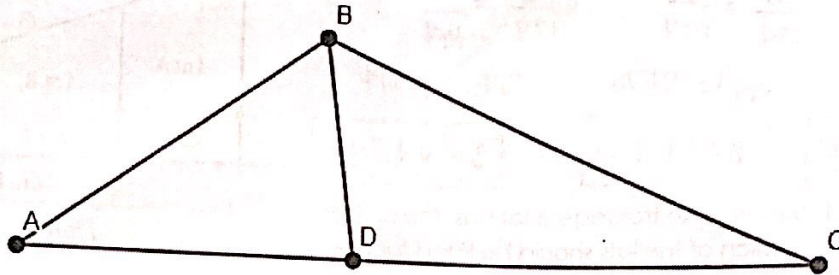


Day 5 – Triangle Angle Bisector Theorem – Notes

Using the following Geogebra link: <https://www.geogebra.org/m/bxVb7h2w> to determine two important relationships you see in the



Relationship #1:

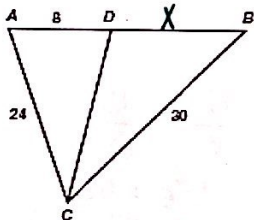
\overline{BD} bisects $\angle ABC$

Relationship #2:

$$\frac{AB}{AD} = \frac{BC}{DC}$$

Examples:

a. \overline{CD} bisects $\angle C$. Find \overline{BD} .



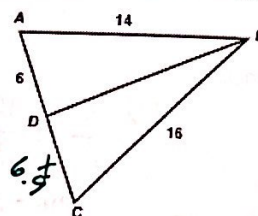
$$\frac{8}{24} = \frac{x}{30}$$

$$240 = 24x$$

$$10 = x$$

$BD = 10$

b. \overline{BD} bisects $\angle B$. Find \overline{AC} .



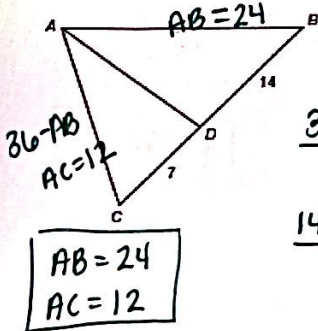
$$\frac{14}{6} = \frac{16}{x}$$

$$14x = 96$$

$$x = 6.9$$

$AC = 12.9$

c. \overline{AD} bisects $\angle A$. $\overline{AC} + \overline{AB} = 36$. Find \overline{AC} and \overline{AB} .



$$AC = 36 - AB$$

$$\frac{36 - AB}{7} = \frac{AB}{14}$$

$$\frac{14(36 - AB)}{7} = \frac{7AB}{7}$$

$$2(36 - AB) = AB$$

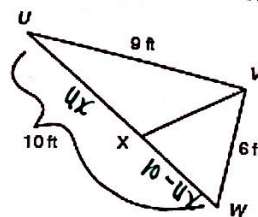
$$72 - 2AB = AB$$

$$72 = 3AB$$

$$AB = 24$$

$AB = 24$
 $AC = 12$

d. \overline{VX} bisects $\angle V$. Find \overline{XW} .



$$\frac{9}{4x} = \frac{6}{10 - 4x}$$

$$60x = 9(10 - 4x)$$

$$60x = 90 - 36x$$

$$150x = 90$$

$4x = 6$