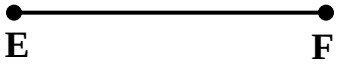
Notes: **SEGMENT BISECTORS**

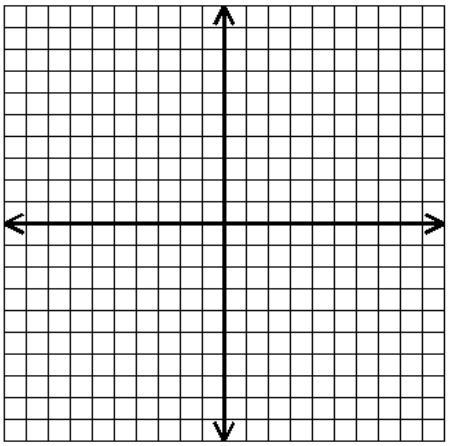
Content Objective: ***I will be able to determine the bisector of a segment when given the measure or coordinates of the individual segments as represented on one-dimensional (1-D) or two-dimensional (2-D) coordinate systems.***

TERM	DESCRIPTION	EXAMPLE
SEGMENT BISECTOR	A plane, ray, line, line segment or point that insects a segment at its _____.	

CONSTRUCTION: Construct a bisector of segment $\overline{EF}$.

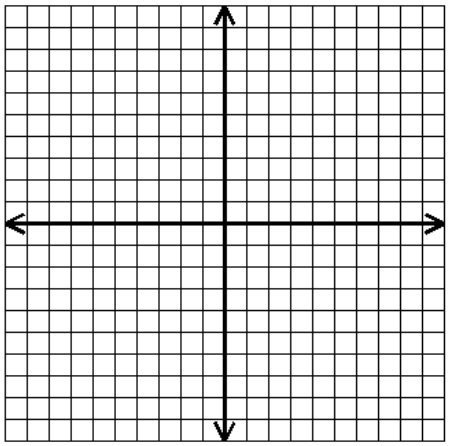


EXAMPLE 1: Plot the line y = 2x - 3. Establish 2 points and draw an segment bisector



Bisector intersect pt:_____

QUICK CHECK: Plot the line y = -3x + 4 Establish 2 points and draw an segment bisector



Bisector intersect pt:_____

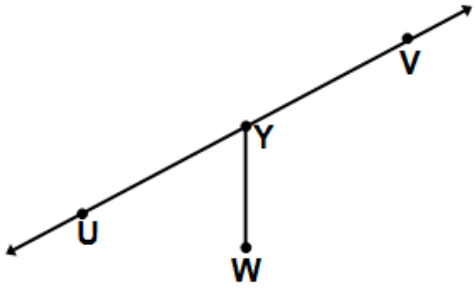
EXAMPLE 2: **B** is between **A** and **C**. **AB** = $2y + 6$, **BC** = $y + 8$, and **AC** = 20. Solve for ***y.***

y = _____

Is ***B*** *is a bisector of* $\overline{\mathbf{AC}}$? Explain. _____

For # 3 – 4, refer to the figure shown in which $\overline{\mathbf{WY}}$ bisects $\overline{\mathbf{UV}}$ at **Y***:*

EXAMPLE 3: If **UY** = 5, then find **YV** and **UV**.



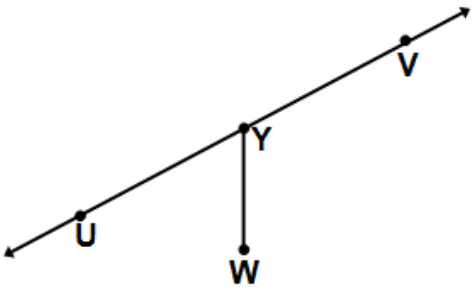
YV = _____ units

UV = _____ units

QUICK CHECK: If **UY** = 13.5 find **YV** and **UV**.

YV = _____

EXAMPLE 4: If **UV** = 18 and **UY** = 9, find **YV**.



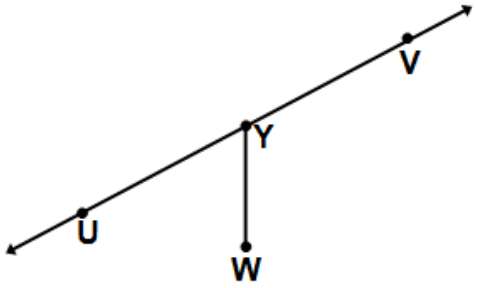
YV = _____ units

QUICK CHECK: If **UV** = 24 find **UY** and **YV**.

YV = _____ UY = _____

For # 5 – 6, refer to the figure below in which $\overline{\mathbf{WY}}$ bisects $\overline{\mathbf{UV}}$ at **Y**:

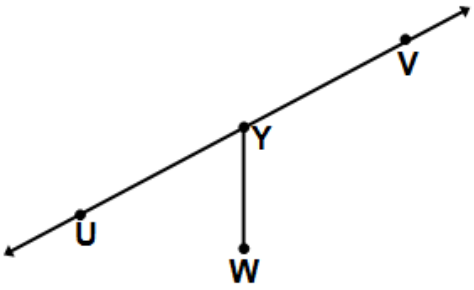
EXAMPLE 5: If **UY** = $4x - 3$ and **YV** = x, find **UY** and **UV**.



UY = _____ units

UV = _____ units

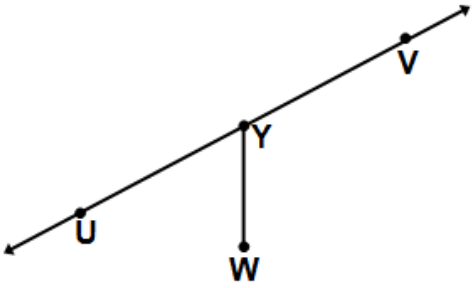
QUICK CHECK: IF **UY** = $5x - 9$ and **YV** = $2x + 12$, find **UY** and **UV**.



UY = _____

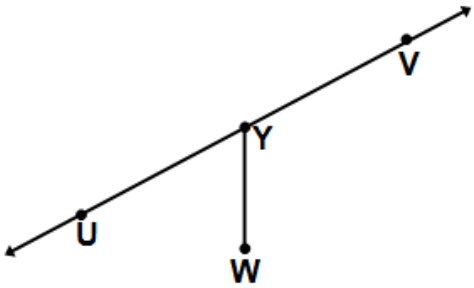
UV = _____

EXAMPLE 6: If **UV** = $x + 6$ and **UY** = $x - 1$, find **YV**.



YV = _____ units

QUICK CHECK: If **UV** = $6x - 10$ and **UY** = $x + 3$, find **YV**.



YV = _____

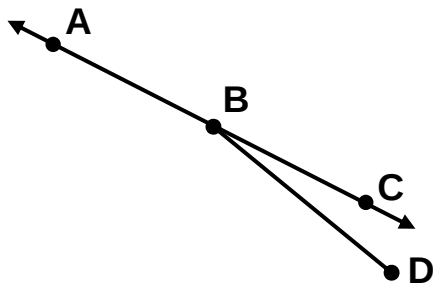
For # 7 – 8, refer to the figure below in which $\overline{\mathbf{BD}}$ bisects $\overline{\mathbf{AC}}$ at **B***:*

EXAMPLE 7: If **AC** = 8x + y = 10, **AB** = -4x + 6, **BC** = 2y - 2, find the values of x, y and **BC.**

x = _____

y = _____

BC = _____ units



QUICK CHECK: If **AC** = 4x + 6y = 28, **AB** = 12y - 2, **BC** = 5x + 2, find **AB.**

x = _____

y = _____

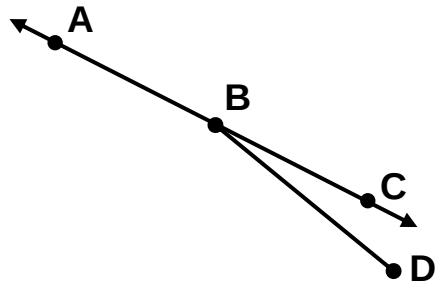
AB = _____ units

EXAMPLE 8: If **AC** = 8x + 7y = 2, **AB** = 5x - 5, **BC** = 10y + 25, find the values of x, y & **BC.**

x = _____

y = _____

BC = _____ units



QUICK CHECK: If **AC** = 4x + 3y = 11, **AB** = 2y + 5, **BC** = 3x + 1, find **AB.**

x = _____

y = _____

AB = _____ units