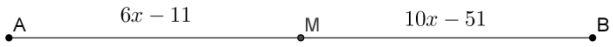
1.3 Segment & Angle Bisector HW Name:_____

1. Point *B* lies on $\overline{AC}$. $AC = 127$, *AB* is represented by the expression $-12x + 11$, and *BC* is represented by the expression $-8x - 4$. What is the length $\overline{AB}$?

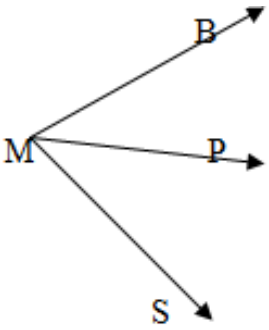
2. Point *E* lies on $\overline{DF}$. *DE* is represented by the expression $4x - 6$. *EF* is represented by the expression $x^2 + 5x$. If $DF = 30$ inches, what is the length of $\overline{DE}$? What is the length of $\overline{EF}$?

3. *M* is the midpoint. Find AB.

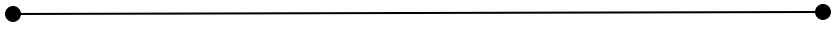


4. If a 49 degree angle is bisected, what is the measure of each new angle?

5. MP bisects <BMS. If m<BMP = 2x + 9 and m<BMS = 7x – 3, find the value of x and m<PMS.

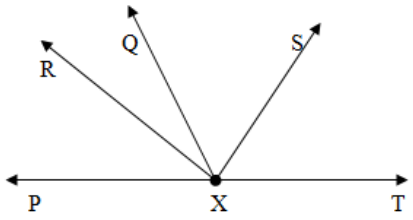


6. Construct a segment bisector of the line segment below.



In the figure to the right, XP and XT are opposite rays (create straight angle) and XQ bisects <PXS. Use the given information to write an equation then find the value of x and indicated angle. (Redraw the picture for each question if necessary.)

7 $m\angle SXT = 4x + 1$, $m\angle QXS = 2x - 2$, and $m\angle QXT = 125$
Find $m\angle QXS$



8. $m\angle RXQ = x + 15$, $m\angle RXS = 5x - 7$, and $m\angle QXS = 3x + 5$
Find $m\angle RXS$

9. $m\angle PXQ = 7x - 6$, $m\angle = 4x + 3$

Find $m\angle PXQ$ and $m\angle SXT$

10. Construct the angle bisector of the angle below.