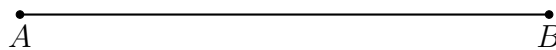


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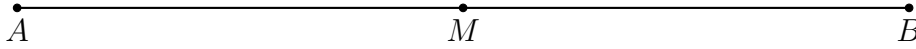
Name:

**2.2 Homework: Midpoint calculations**

1. Complete the construction of a perpendicular bisector and fill in the blanks in the steps.
  - (a) Given the line segment  $\overline{AB}$ .
  - (b) Construct circle  $A$  with radius  $AB$ .
  - (c) Construct circle \_\_\_\_\_ with radius  $AB$ .
  - (d) Label the intersections of the two circles  $P$  and  $Q$ .
  - (e) Draw line \_\_\_\_\_.
  - (f) Label the intersection of  $\overline{AB}$  and  $\overleftrightarrow{PQ}$  as point  $M$ .
  - (g)  $M$  is the midpoint of  $\overline{AB}$  and  $\overline{AB} \perp \overleftrightarrow{PQ}$



2. Given line segment  $\overline{AB}$  with midpoint  $M$ , that is,  $\overline{AM} \cong \overline{BM}$ .  $AB = 11.8$ . Find the length of  $\overline{AM}$ .



3. Given  $\overline{AMB}$ ,  $M$  bisects  $\overline{AB}$ ,  $AM = 2x - 10$ ,  $BM = x + 2$ . Find  $AB$ .  
Complete all the steps for full credit.

- (a) Sketch and label the situation
- (b) Write an equation
- (c) Solve for  $x$
- (d) Answer the question
- (e) Check your solution

4. Given that  $S$  bisects  $\overline{RT}$ .  $RT = 7x - 3$ ,  $ST = 2x + 6$ . Find  $RT$ .  
Complete all the steps for full credit.