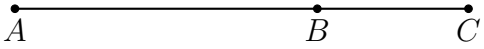
1.2 Classwork: Segment Addition Postulate and solving for length

1. Given $\overline{ABC}$, $AB = 8$, and $BC = 4$.



   (a) Find AC. Write your answer as an equation.

   (b) Name the postulate used in this problem: _____.

2. Given $\overline{RST}$, $RS = 5$, and $RT = 7\frac{1}{2}$. Find ST.

3. Given $\overline{DEF}$, $DE = x + 4$, $EF = x + 2$, $DF = 14$. Find DE.

   (a) Label the diagram with the given values.

   (b) Write an equation:

   (c) Solve for x

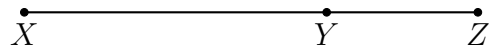
   (d) Answer the question.

   Find DE by substituting for x.

   (e) Check your answer

4. The points shown are in a straight line, $\overline{XYZ}$.

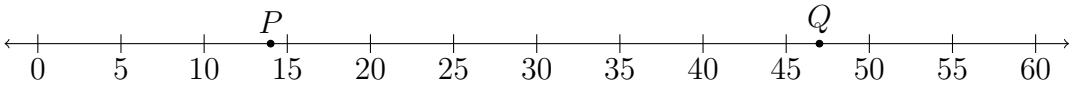
   (a) Measure and label the lengths XY and YZ to the nearest centimeter.



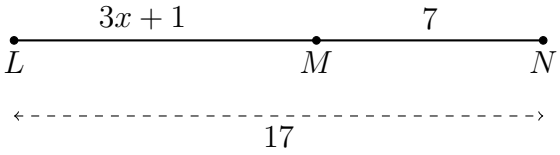
   (b) Write an equation employing the Segment Addition Postulate.
   (fill in the blanks with values in centimeters)

   $XZ =$ _____ + _____ = _____

5. Points $P = 14$ and $Q = 47$ are shown below. Find PQ.



6. Given $\overline{LMN}$, $LM = 3x + 1$, $MN = 7$, $LN = 17$. Find x.



   (a) Write down an equation to represent the situation.

   (b) Solve for x.

   (c) Check your answer.