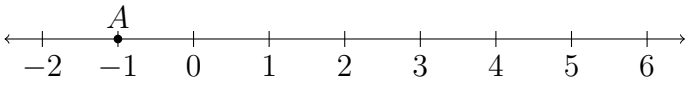
1.5 Homework: Segments, equilateral and isosceles triangles, perimeter

1. Given point $A(-1)$ as shown below. Locate point, $B > 0$, on the number line such that $AB = 3\frac{1}{2}$.



   (a) Mark and label B.

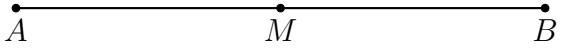
   (b) State the value of B, writing an equation to support your work.

2. Given M is the midpoint of $\overline{AB}$, $AM = 5x + 11$, $MB = x + 21$.

   (a) Mark the diagram with the values and tick marks

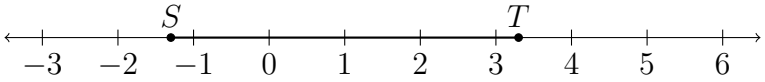
   (b) Write an equation and solve for x

   (c) Check your result



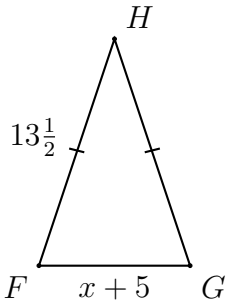
3. Given $S(-1.3)$ and $T(3.3)$, as shown on the number line.

   Mark and label the midpoint M that bisects $\overline{ST}$.

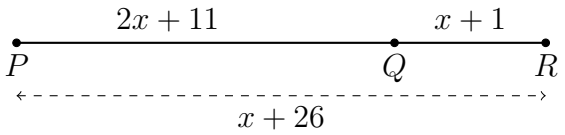


4. The perimeter of the isosceles $\triangle FGH$ is 35 with $\overline{FH} \cong \overline{GH}$. If $FG = x + 5$ and $FH = 13\frac{1}{2}$, find x.

   Show your work with an equation for full credit.



5. Given $\overline{PQR}$, $PQ = 2x + 11$, $QR = x + 1$, $PR = x + 26$. Find x.

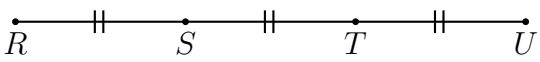


   (a) Write down an equation to represent the situation.

   (b) Solve for x.

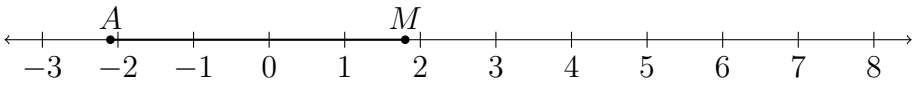
   (c) Check your answer.

6. Given the points S and T trisect the line segment $\overline{RU}$, as shown below. If $RT = 7$, find RU.



7. Given $A(-2.1)$ and $M(1.8)$, as shown on the number line. The point B is such that M bisects $\overline{AB}$.

   Find the value of B. Mark and label it on the number line.



8. The point Q lies on $\overline{AB}$ three quarters of the way from A to B. Given $AB = 28$.
   (a) Mark and label the approximate location of Q.
   (b) Find AQ. State an equation for full credit.