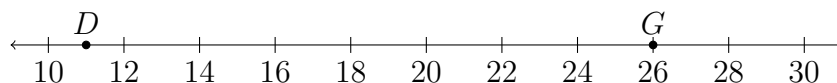


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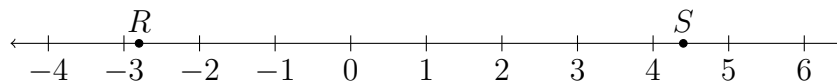
### 1.7 Extension Quiz: Absolute value, trisection, algebra

1. Given  $\overleftrightarrow{DG}$  as shown on the number line, with  $D = 11$  and  $G = 26$ .



Points  $E$  and  $F$  trisect  $\overline{DG}$ . Find the values of  $E$  and  $F$  and mark and label them on the number line  $\overleftrightarrow{DG}$ .

2. Given  $\overleftrightarrow{RS}$  as shown on the number line, with  $R = -2.8$  and  $S = 4.4$ .

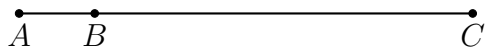


The points  $T$  and  $U$  trisect  $\overline{RS}$ . Find their values, and mark and label them on the number line.

3. Given  $\overline{PQR}$ , with  $PQ = \frac{1}{2}x + 4$ ,  $QR = x + 3$ , and  $PR = 2x + 5$ . Find  $PR$ .  
Complete all the steps for full credit.

4. Given  $\overline{ABC}$ ,  $AB = \frac{2}{3}$ , and  $AC = 3\frac{1}{3}$ .

Find  $BC$ .

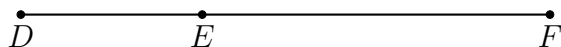


5. Given  $\overline{PQR}$ , with  $PQ = 4x - 4$ ,  $QR = 2x + 3$ , and  $PR = 5x + 9$ . Find  $PR$ .  
Complete all the steps for full credit.

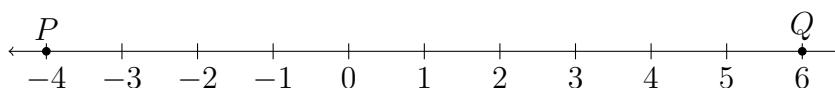
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6. Given  $\overline{DEF}$ ,  $DF = 75$  and  $\overline{DE}$  is half the length of  $\overline{EF}$ .

Find  $DE$ .

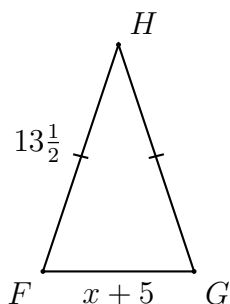


7. Given  $\overleftrightarrow{PQ}$  as shown on the number line. Divide segment  $\overline{PQ}$  into five congruent segments by marking and labeling the points  $R$ ,  $S$ ,  $T$ , and  $U$  on the numberline.

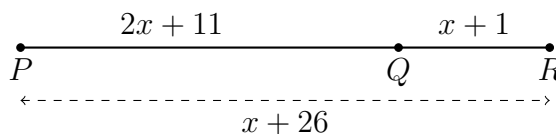


8. The perimeter of the isosceles  $\triangle FGH$  is 35 with  $\overline{FH} \cong \overline{GH}$ . If  $FG = x + 5$  and  $FH = 13\frac{1}{2}$ , find  $x$ .

Show your work with an equation for full credit.



9. 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.

10. Given  $\overline{DEF}$ ,  $DE = 3\frac{1}{3}$ , and  $EF = 1$ . Find  $DF$ .

