

Name:

1.2 Extension: Algebra with fractional coefficients

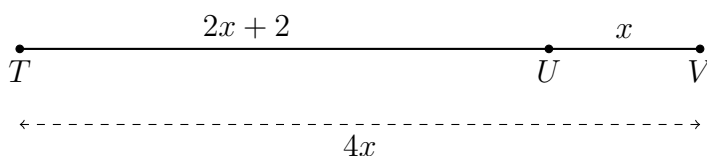
A check is required for all algebra solutions

1. Solve each equation for x .

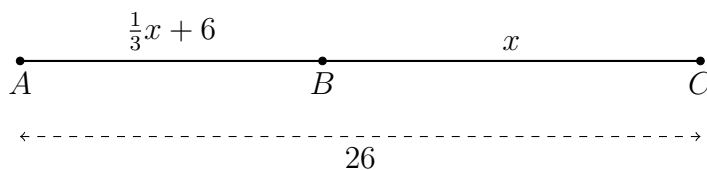
(a) $\frac{1}{2}x = 8$

(b) $\frac{1}{2}(x + 5) = 8$

2. As shown, three collinear points with $TU = 2x + 2$, $UV = x$, $TV = 4x$. Find TV .



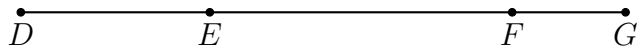
3. As shown, three collinear points with $AB = \frac{1}{3}x + 6$, $BC = x$, $AC = 26$. Find x .



4. Given \overline{DEFG} , $DE = 3\frac{1}{2}$, $EF = 7\frac{1}{2}$, and $FG = 2\frac{1}{2}$.

Find DG , expressed as a fraction, not a decimal.

diagram not to scale



5. Find the value of each expression. (learn more by *not* using a calculator)

(a) $|2 - 13| =$

(c) $|4 - (-2)| =$

(b) $|10 + (-3)| =$

(d) $|-5 - (-7)| =$

6. Circle true or false for each statement.

T **F** There are two solutions for the equation $|x| = 9$, $x = 9$ and $x = -9$.

T **F** If x is negative, then $|x|$ must be positive.

T **F** If x is positive, then $|-x|$ is negative.

T **F** The value of $|x| + |3|$ is always positive.

7. Find all values of x that satisfy each equation. (show the check)

(a) $|x + 2| = 5$

(b) $|x - 4| = 12$