

2.3 Solving Inequalities

**PRACTICE**

Directions: Solve each inequality. Express the solution graphically and in set notation.

1)  $7 < \frac{x}{9} + 6$

$$\begin{array}{r} -6 \quad -6 \\ \hline (9) | < \frac{x}{9} (9) \\ 9 < x \end{array}$$

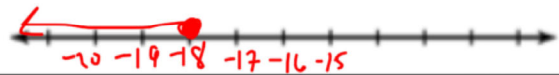
$\{x \text{ real} \mid x > 9\}$



2)  $-7 + \frac{h}{3} \leq -13$

$$\begin{array}{r} +7 \quad +7 \\ \hline (3) \frac{h}{3} \leq -6(3) \\ h \leq -18 \end{array}$$

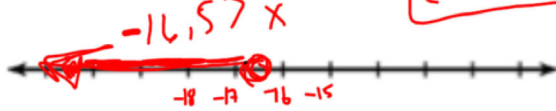
$\{h \text{ real} \mid h \leq -18\}$



3)  $50.32 < -6.29(8.5 + x)$

$$\begin{array}{r} 50.32 < -53.465 + -6.29x \\ +53.465 \quad +53.465 \\ \hline 103.785 < -6.29x \\ -6.29 \quad -6.29 \\ \hline -16.57x \end{array}$$

$\{x \text{ real} \mid x < -16.57\}$



4)  $-3 - 3a + 6a \neq 9$

$$\begin{array}{r} -3 + 3a \neq 9 \\ +3 \quad +3 \\ \hline 3a + 12/3 \\ a \neq 4 \end{array}$$

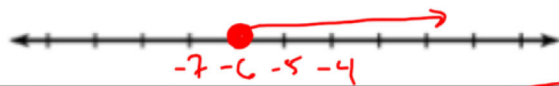
$\{a \text{ real} \mid a \neq 4\}$



5)  $-5(1 - 2n) \geq -17 + 8n$

$$\begin{array}{r} -5 + 10n \geq -17 + 8n \\ -8n \quad -8n \\ \hline -5 + 2n \geq -17 \\ +5 \quad +5 \\ \hline 2n \geq -12 \\ \frac{2n}{2} \geq \frac{-12}{2} \end{array}$$

$\{n \text{ real} \mid n \geq -6\}$



6)  $30 - 4a \geq -2(7a - 5)$

$$\begin{array}{r} 30 - 4a \geq -14a + 10 \\ +14a \quad +14a \\ \hline 30 + 10a \geq 10 \\ -30 \quad -30 \\ \hline 10a \geq -20 \\ \frac{10a}{10} \geq \frac{-20}{10} \\ a \geq -2 \end{array}$$

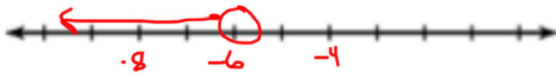
$\{a \text{ real} \mid a \geq -2\}$



7)  $16 + 4x \leq -4(x + 8)$

$$\begin{array}{r} 16 + 4x \leq -4x + 32 \\ +4x \quad +4x \\ \hline 16 + 8x \leq 32 \\ -16 \quad -16 \\ \hline 8x \leq 16 \\ \frac{8x}{8} \leq \frac{16}{8} \end{array}$$

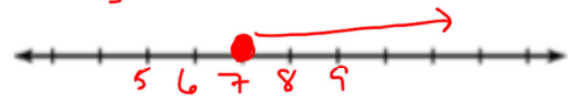
$\{x \text{ real} \mid x \leq -2\}$



8)  $-27 - 7h \geq -2h - (8h + 6)$

$$\begin{array}{r} -27 - 7h \geq -2h - 8h - 6 \\ -27 - 7h \geq -10h - 6 \\ +10h \quad +10h \\ \hline -27 + 3h \geq -6 \\ +27 \quad +27 \\ \hline 3h \geq 21 \\ \frac{3h}{3} \geq \frac{21}{3} \end{array}$$

$\{h \text{ real} \mid h \geq 7\}$



## Alg 2.3 Practice Solutions Condensed.notebook

Directions: Multiply the polynomials.

9)  $2x(4x - 8)$

$$8x^2 - 16x$$

10)  $(2x - 1)(4x - 8)$

$$8x^2 - 16x - 4x + 8$$

$$8x^2 - 20x + 8$$

11)  $(2x - 1)(4x^2 - 8x + 3)$

$$8x^3 - 16x^2 + 6x - 4x^2 + 8x - 3$$

$$8x^3 - 20x^2 + 14x - 3$$