

## 3.3

1)  $|n| \leq -11$

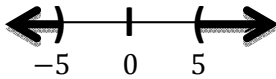
*false**No Solution  $\emptyset$* 

3)  $|b| \leq -10$

*false**No Solution  $\emptyset$* 

5)  $|x| > 5$

$x > 5 \text{ or } x < -5$

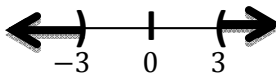


$(-\infty, -5) \cup (5, \infty)$

7)  $\frac{10|n|}{10} > \frac{30}{10}$

$|n| > 3$

$n > 3 \text{ or } n < -3$



$(-\infty, -3) \cup (3, \infty)$

9)  $\frac{-3|x|}{-3} < \frac{36}{-3}$

$x > -12$

*false**No Solution  $\emptyset$* 

11)  $|n| + 4 > -5$

$\frac{-4}{-4} \quad \frac{-4}{-4}$

$|n| > -9$

*true**All Real Numbers  $\mathbb{R}$* 

13)  $10 - 8|p| \geq 18$

$\frac{-10}{-8} \quad \frac{-10}{-8}$

$\frac{-8|p|}{-8} \geq \frac{8}{-8}$

$|p| \geq -1$

*false**No solution  $\emptyset$* 

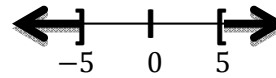
15)  $9|n| - 3 \geq 42$

$+3 \quad +3$

$\frac{9|n|}{9} \geq \frac{45}{9}$

$|n| \geq 5$

$n \geq 5 \text{ or } n \leq -5$



$(-\infty, -5) \cup (5, \infty)$

17)  $\left|\frac{m}{9}\right| \geq -5$

*true**All Real Numbers  $\mathbb{R}$* 

19)  $|9 + x| > -2$

*true**All Real Numbers  $\mathbb{R}$* 

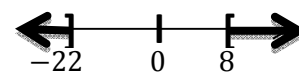
21)  $\left|\frac{x+7}{3}\right| \geq 5$

$(3) \frac{v+7}{3} \geq 5(3) \text{ or } (3) \frac{v+7}{3} \leq -5(3)$

$v + 7 \geq 15 \text{ or } v + 7 \leq -15$

$\frac{-7}{-7} \quad \frac{-7}{-7} \quad \frac{-7}{-7} \quad \frac{-7}{-7}$

$v \geq 8 \text{ or } v \leq -22$



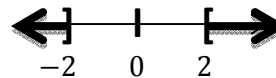
$(-\infty, -22] \cup [8, \infty)$

23)  $\frac{7|-7x|}{7} \geq \frac{98}{7}$

$|-7x| \geq 14$

$\frac{-7x}{-7} \geq \frac{14}{-7} \text{ or } \frac{-7x}{-7} \leq \frac{-14}{-7}$

$x \leq -2 \text{ or } x \geq 2$



$(-\infty, -2) \cup (2, \infty)$

$$25) -5 + |-8k| \geq 51$$

$$\begin{array}{r} +5 \qquad \qquad +5 \\ \hline |-8k| \geq 56 \end{array}$$

$$\frac{|-8k|}{-8} \geq \frac{56}{-8} \text{ or } \frac{|-8k|}{-8} \leq \frac{-56}{-8}$$

$$k \leq -7 \text{ or } k \geq 7$$

$$(-\infty, -7) \cup (7, \infty)$$

$$27) 8 - 4\left|\frac{x}{9}\right| > 12$$

$$\begin{array}{r} -8 \qquad \qquad -8 \\ \hline -4\left|\frac{x}{9}\right| > 4 \end{array}$$

$$\frac{\left|\frac{x}{9}\right|}{-4} < \frac{4}{-4}$$

$$\left|\frac{x}{9}\right| < -1$$

*false*  
No Solution  $\emptyset$

$$29) 7|-9 + m| + 3 \geq 66$$

$$\begin{array}{r} -3 \quad -3 \\ \hline 7|-9+m| \geq 63 \end{array}$$

$$\frac{7|-9+m|}{7} \geq \frac{63}{7}$$

$$|-9 + m| \geq 9$$

$$-9 + m \geq 9 \text{ or } -9 + m \leq -9$$

$$\begin{array}{r} +9 \quad +9 \quad +9 \quad +9 \\ \hline m \geq 18 \text{ or } m \leq 0 \end{array}$$

$$(-\infty, 0) \cup (18, \infty)$$

$$31) |3n + 10| \leq -26$$

*false*  
No Solution  $\emptyset$

$$33) |10b + 10| > 70$$

$$10b + 10 > 70 \text{ or } 10b + 10 < -70$$

$$\begin{array}{r} -10 \quad -10 \\ \hline \frac{10b}{10} > \frac{60}{10} \text{ or } \frac{10b}{10} < \frac{-80}{10} \end{array}$$

$$b > 6 \text{ or } b < -8$$

$$(-\infty, -8) \cup (6, \infty)$$

$$35) |-10 + x| \geq 8$$

$$-10 + x \geq 8 \text{ or } -10 + x \leq -8$$

$$\begin{array}{r} +10 \quad +10 \quad +10 \quad +10 \\ \hline x \geq 18 \text{ or } x \leq 2 \end{array}$$

$$(-\infty, 2) \cup (18, \infty)$$

$$37) |-10 + a| - 3 \geq 7$$

$$\begin{array}{r} +3 \quad +3 \\ \hline |-10 + a| \geq 10 \end{array}$$

$$-10 + a \geq 10 \text{ or } -10 + a \leq -10$$

$$\begin{array}{r} +10 \quad +10 \quad +10 \quad +10 \\ \hline a \geq 20 \text{ or } a \leq 0 \end{array}$$

$$(-\infty, 0) \cup (20, \infty)$$

$$39) |3x - 1| - 9 \leq -8$$

$$\begin{array}{r} +9 \quad +9 \\ \hline |3x - 1| \leq 1 \end{array}$$

$$-1 \leq 3x - 1 \leq 1$$

$$\begin{array}{r} +1 \quad +1 \quad +1 \\ \hline \frac{0}{3} \leq \frac{3x}{3} \leq \frac{2}{3} \end{array}$$

$$0 \leq x \leq \frac{2}{3}$$

$$\left[0, \frac{2}{3}\right]$$

$$41) -8|8n - 1| + 4 \geq -116$$

$$\begin{array}{r} -4 \quad -4 \\ \hline -8|8n-1| \geq -120 \end{array}$$

$$\frac{-8|8n-1|}{-8} \geq \frac{-120}{-8}$$

$$|8n - 1| \geq 15$$

$$-15 \leq 8n - 1 \leq 15$$

$$\begin{array}{r} +1 \quad +1 \quad +1 \\ \hline \frac{-14}{8} \leq \frac{8n}{8} \leq \frac{16}{8} \end{array}$$

$$-\frac{7}{4} \leq n \leq 2$$

$$\left[-\frac{7}{4}, 2\right]$$

