

3.2

1) $(3) \frac{n}{3} \leq -3 (3) \text{ or } \frac{-5n}{-5} \leq \frac{-10}{-5}$
 $n \leq -9 \text{ or } n \geq 2$

$(-\infty, -9] \cup [2, \infty)$

$v > -8 \text{ and } v < 3$

$(-8, 3)$

3) $x + 7 \geq 12 \text{ or } \frac{9x}{9} < \frac{-45}{9}$
 $\frac{-7}{-7} \text{ or } x < -5$
 $x \geq 5$

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

9) $-8 + b < -3 \text{ and } \frac{4b}{4} < \frac{20}{4}$
 $\frac{+8}{+8} \text{ and } b < 5$
 $b < 5 \text{ and } b < 5$

$(-\infty, 5)$

5) $x - 6 < -13 \text{ or } \frac{6x}{6} \leq \frac{-60}{6}$
 $\frac{+6}{+6} \text{ or } x \leq -10$

$(-\infty, -7)$

11) $a + 10 \geq 3 \text{ and } \frac{8a}{8} \leq \frac{48}{8}$
 $\frac{-10}{-10} \text{ and } a \leq 6$
 $a \geq -7 \text{ and } a \leq 6$

$[-7, 6]$

7) $(8) \frac{v}{8} > -1(8) \text{ and } v - 2 < 1$
 13) $3 \leq 9 + x \leq 7$
 $\frac{-9}{-9} \text{ or } -6 \leq x \leq -2$

$[-6, -2]$

17) $-3 < x - 1 < 1$
 $\frac{+1}{+1} \text{ or } -2 < x < 2$

$(-2, 2)$

15) $11 < 8 + k \leq 12$
 $\frac{-8}{-8} \text{ or } 3 < k \leq 4$

$(3, 4]$

19) $-4 < 8 - 3m \leq 11$
 $\frac{-8}{-3} < \frac{-3m}{-3} \leq \frac{3}{-3}$
 $4 > m \geq -1$
 $-1 \leq m < 4$

$[-1, 4)$

$$21) -16 \leq 2n - 10 \leq -22$$

$$-16 \leq -22$$

No solution \emptyset

$$23) -5b + 10 \leq 30 \text{ and } 7b + 2 \leq -40$$

$$\frac{-10 - 10}{-5} \leq \frac{20}{-5} \text{ and } \frac{-2 - 2}{7} \leq \frac{-42}{7}$$

$$b \geq -4 \text{ and } b \leq -6$$

No Solution \emptyset

$$25) 3x - 9 < 2x + 10 \text{ and } 5 + 7x \leq 10x - 10$$

$$\frac{-2x - 2x}{x - 9} < \frac{-2x}{10}$$

$$\frac{-7x - 7x}{5} \leq \frac{-7x}{3x - 10}$$

$$x - 9 < 10 \text{ and } 5 \leq 3x - 10$$

$$\frac{+9}{+9} \quad \frac{+10}{+10}$$

$$x < 19 \quad \frac{15}{3} \leq \frac{3x}{3}$$

$$5 \leq x$$

$[5, 19)$

$$27) -8 - 6v \leq 8 - 8v \text{ and } 7v + 9 \leq 6 + 10v$$

$$\frac{+8v}{+8v} \quad \frac{+8v}{+8v} \quad \frac{-7v}{-7v} \quad \frac{-7v}{-7v}$$

$$-8 + 2v \leq 8 \text{ and } 9 \leq 6 + 3v$$

$$\frac{+8}{+8} \quad \frac{+8}{+8} \quad \frac{-6}{-6} \quad \frac{-6}{-6}$$

$$\frac{2v}{2} \leq \frac{16}{2} \text{ and } \frac{3}{3} \leq \frac{3v}{3}$$

$$v \leq 8 \text{ and } 1 \leq v$$

$[1, 8]$

$$29) 1 + 5k \leq 7k - 3 \text{ or } k - 10 > 2k + 10$$

$$\frac{-5k - 5k}{-5k - 5k} \quad \frac{-k}{-k} \quad \frac{-k}{-k}$$

$$1 \leq 2k - 3 \text{ or } -10 > k + 10$$

$$\frac{+3}{+3} \quad \frac{+3}{+3} \quad \frac{-10}{-10} \quad \frac{-10}{-10}$$

$$\frac{4}{2} \leq \frac{2k}{2} \text{ or } -20 > k$$

$$2 \leq k$$

$(-\infty, -20) \cup [2, \infty)$

$$31) \quad 2x + 9 \geq 10x + 1 \text{ and } 3x - 2 < 7x + 2$$

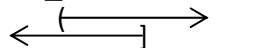
$$\frac{-2x}{-2x} \frac{-2x}{-2x} \quad \frac{-3x}{-3x} \frac{-3x}{-3x}$$

$$9 \geq 8x + 1 \quad \text{and} \quad -2 < 4x + 2$$

$$\frac{-1}{-1} \frac{-1}{-1} \quad \frac{-2}{-2} \frac{-2}{-2}$$

$$\frac{8}{8} \geq \frac{8x}{8} \quad \text{and} \quad \frac{-4}{4} < \frac{4x}{4}$$

$$1 \geq x \quad \text{and} \quad -1 < x$$



$$-1 \quad 0 \quad 1 \quad (-1, 1]$$