

Algebra I

Chapter 6 Review

Chapter 6 Test on Thursday

Solve each inequality.

$$\begin{array}{r} x - 7 > 3 \\ +7 \quad +7 \\ \hline x > 10 \\ \{x \mid x > 10\} \end{array}$$

$$\begin{array}{r} 3 \geq t + 1 \\ -1 \quad -1 \\ \hline 2 \geq t \\ \{t \mid t \leq 2\} \end{array}$$

$$\begin{array}{r} 5 \cdot 3 < \frac{c}{5} \cdot 5 \\ 15 < c \\ \{c \mid c > 15\} \end{array}$$

$$\begin{array}{r} -4 \cdot 1 \geq \frac{-y}{4} \cdot -4 \\ -4 \leq y \\ \{y \mid y \geq -4\} \end{array}$$

$$\frac{5s}{5} < \frac{-25}{5} \quad \frac{17+a}{-17} \leq \frac{7}{-17} \quad \frac{-36}{3} \leq \frac{3t}{3}$$

$$s < -5 \quad a \leq -10 \quad -12 \leq t$$

$$\{s \mid s < -5\} \quad \{a \mid a \leq -10\} \quad \{t \mid t \geq -12\}$$

Six is at least four more than a number.

$$6 \geq 4+n$$

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

$$2 \geq n$$

$$\{n \mid n \leq 2\}$$

$$6y - 8 > 4y + 26$$

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

$$6y > 4y + 34$$

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

$$\{y \mid y > 17\} \quad \frac{2y}{2} > \frac{34}{2}$$

$$y > 17$$

$$3(2d + 1) \geq 4(2d + 3) + 3$$

$$6d + 3 \geq 8d + 12 + 3$$

$$6d + 3 \geq 8d + 15$$

$$\frac{-6d}{-6d} \quad \frac{-6d}{-6d}$$

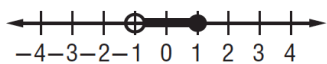
$$\frac{-3}{+15} \geq \frac{2d + 15}{+15}$$

$$\frac{12}{2} \geq \frac{2d}{2}$$

$$6 \geq d$$

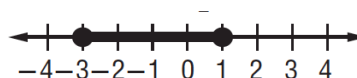
$$\{d \mid d \leq 6\}$$

Give the compound inequality for each solution set.



$$\{x \mid -1 < x \leq 1\}$$

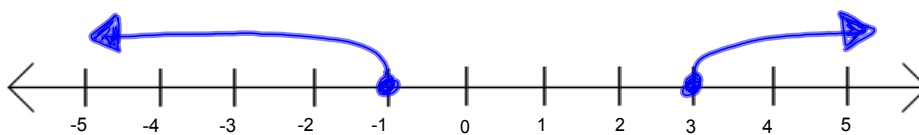
$$x > -1 \text{ and } x \leq 1$$



$$x \geq -3 \text{ and } x \leq 1$$

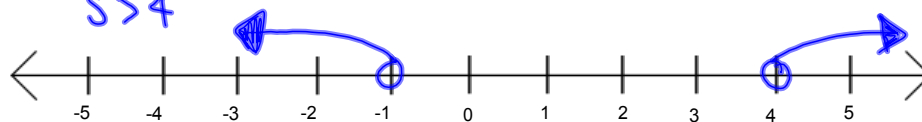
Graph each compound inequality.

$$x \leq -1 \text{ or } x \geq 3$$



$$2s + 1 > 9 \text{ or } s < -1$$

$$\begin{array}{r} 2s + 1 > 9 \\ -1 \quad -1 \\ \hline 2s > 8 \\ \frac{2s}{2} > \frac{8}{2} \\ s > 4 \end{array}$$



$$7a + 3 \geq a - 15 \text{ or } 5a - 3 < 8a$$

$$\begin{array}{r} 7a + 3 \geq a - 15 \\ -a \quad -a \\ \hline 6a + 3 \geq -15 \\ -3 \quad -3 \\ \hline 6a \geq -18 \\ \frac{6}{6} \quad \frac{6}{6} \\ a \geq -3 \end{array}$$

$$\begin{array}{r} 5a - 3 < 8a \\ +3 \quad +3 \\ \hline 5a < 8a + 3 \\ -8a \quad -8a \\ \hline -3a < 3 \\ \frac{-3}{-3} \quad \frac{3}{-3} \\ a > -1 \end{array}$$

$$\begin{array}{r} 6a + 3 \geq -15 \\ -3 \quad -3 \\ \hline 6a \geq -18 \\ \frac{6}{6} \quad \frac{6}{6} \\ a \geq -3 \end{array}$$

$$\begin{array}{r} 5a < 8a + 3 \\ -8a \quad -8a \\ \hline -3a < 3 \\ \frac{-3}{-3} \quad \frac{3}{-3} \\ a > -1 \end{array}$$

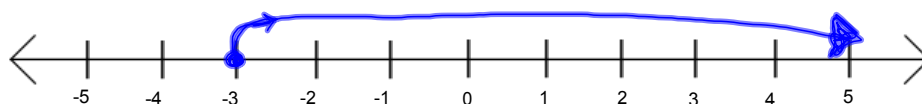
$$\begin{array}{r} 6a \geq -18 \\ \frac{6}{6} \quad \frac{6}{6} \\ a \geq -3 \end{array}$$

$$\begin{array}{r} -3a < 3 \\ \frac{-3}{-3} \quad \frac{3}{-3} \\ a > -1 \end{array}$$

$$a \geq -3$$

$$a > -1$$

$$\{a \mid a \geq -3 \text{ or } a > -1\}$$



Find the solution set for each.

$$-3 < 2x + 7 \leq 13$$

$$\begin{array}{r} -3 < 2x + 7 \\ -7 \quad -7 \\ \hline -10 < 2x \end{array}$$

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

$$-5 < x$$

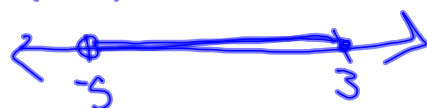
$$x > -5$$

$$\begin{array}{r} 2x + 7 \leq 13 \\ -7 \quad -7 \\ \hline 2x \leq 6 \end{array}$$

$$\frac{2x}{2} \leq \frac{6}{2}$$

$$x \leq 3$$

$$\{x \mid -5 < x \leq 3\}$$



$$|2x - 5| = 9$$

$$\begin{array}{r} 2x - 5 = 9 \\ +5 \quad +5 \\ \hline 2x = 14 \\ \frac{2x}{2} \quad \frac{14}{2} \\ x = 7 \end{array}$$

$$x = 7$$

$$\begin{array}{r} 2x - 5 = -9 \\ +5 \quad +5 \\ \hline 2x = -4 \\ \frac{2x}{2} \quad \frac{-4}{2} \\ x = -2 \end{array}$$

$$x = -2$$

$$\{-2, 7\}$$

Graph each solution set.

$$|4 - 7x| \geq 3$$

$$\begin{array}{r} 4 - 7x \geq 3 \\ -4 \quad -4 \\ \hline -7x \geq -1 \\ \frac{-7x}{-7} \geq \frac{-1}{-7} \\ x \leq \frac{1}{7} \end{array}$$

$$\begin{array}{r} 4 - 7x \leq -3 \\ -4 \quad -4 \\ \hline -7x \leq -7 \\ \frac{-7x}{-7} \leq \frac{-7}{-7} \\ x \geq 1 \end{array}$$

$$|5x - 10| > 10$$

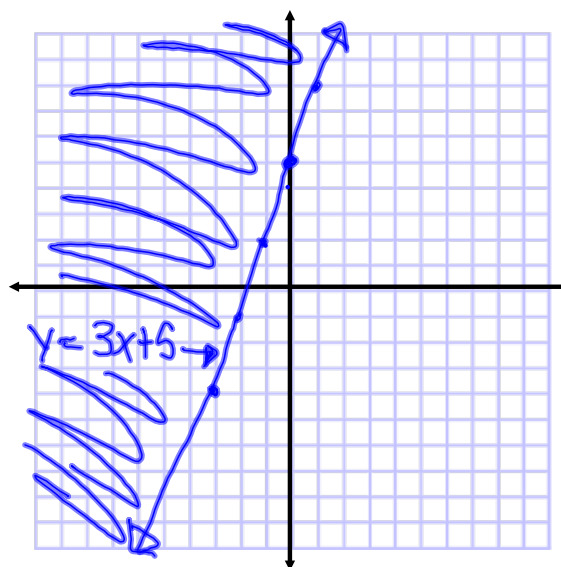


Graph each inequality on a coordinate plane.

$$5 - y \leq -3x$$

$$\begin{array}{r} 5 - y = -3x \\ -5 \quad -5 \\ \hline -1(-y) = (-3x - 5)(-1) \\ y = 3x + 5 \end{array}$$

(0,0)
 $5 - 0 \leq -3(0)$
 $5 \leq 0$ False



$$y \geq 2x - 1$$

$$y = 2x - 1$$

$$(0, 0)$$

$$0 \geq 2(0) - 1$$

$$0 \geq -1$$

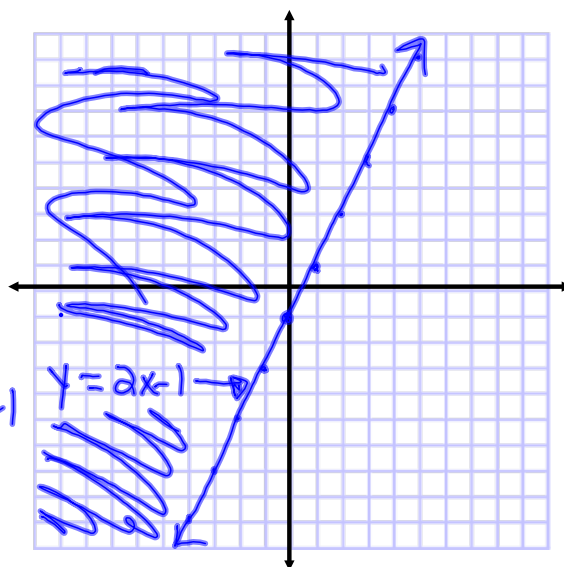
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$$(2, 0)$$

$$0 \geq 2(2) - 1$$

$$0 \geq 3$$

F



Juan's income y consists of at least \$37,500 salary plus 5% commission on all of his sales x . Write an inequality to represent Juan's income in one year.

$$y \geq \$37,500 + 0.05x$$