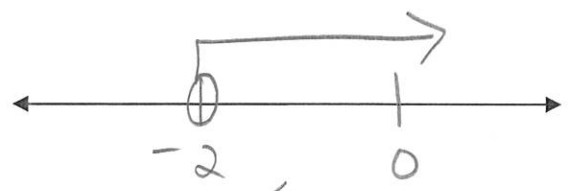


Name: _____
 Date: Key
 Period: _____

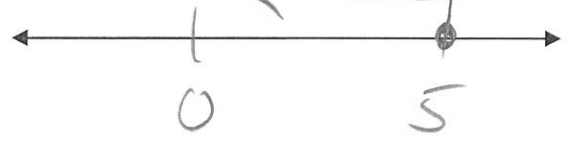
Algebra 1 Chapter 5 Study Guide

Graph each inequality.

1. $x > -2$



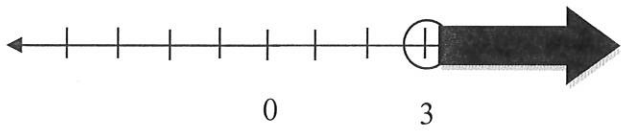
2. $m \leq 5$



$<$ or \leq Shade left
 $>$ or \geq Shade Right
 $<$ or $>$ open circle
 \leq or \geq closed circle

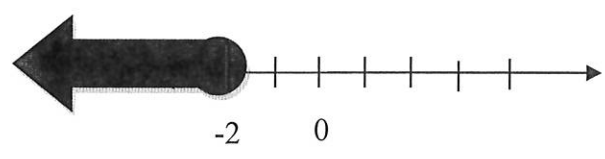
Write the inequality shown by each graph.

3.



$x > 3$

4.



$x \leq -2$

Write an inequality for each situation and graph the solutions.

5. You must purchase at least 5 tickets to receive a discount.

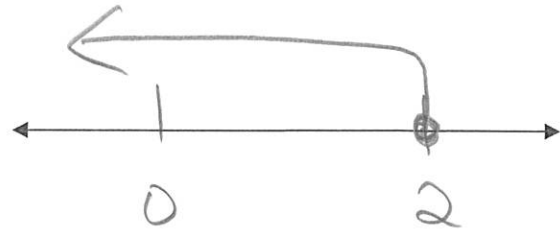
$t \geq 5$

6. Children under 13 are not admitted to certain movies without an adult.

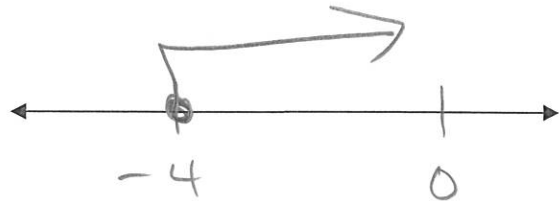
$m < 13$

Solve each inequality and graph the solutions.

7. $k + 5 \leq 7$
 $\frac{-5 \quad -5}{k \leq 2}$



8. $r - 8 \geq -12$
 $\frac{+8 \quad +8}{r \geq -4}$



9. Allie must sell at least 50 gift baskets for the band fund-raiser. She already sold 36 baskets. Write and solve an inequality to determine how many more baskets Allie must sell for the fund-raiser.

$b = \#$ of baskets need to sell

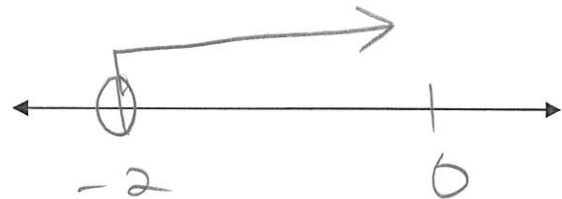
$$\begin{array}{r} b + 36 \geq 50 \\ -36 \quad -36 \\ \hline b \geq 14 \end{array}$$

She sell at least 14 more basket

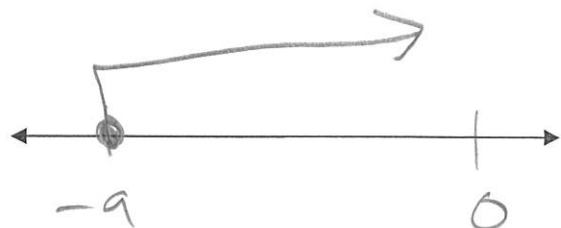
Solve each inequality and graph the solutions.

10. $-4x < 8$
 $\frac{-4 \quad -4}{x > -2}$

* multiply or Divide by a negative switch/Flip the inequality symbol

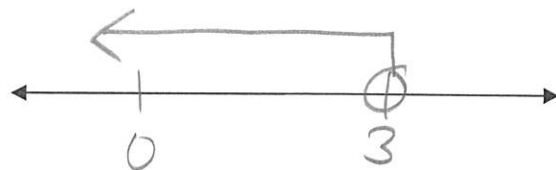


11. $\frac{d}{3} \geq -3 \cdot 3$
 $d \geq -9$

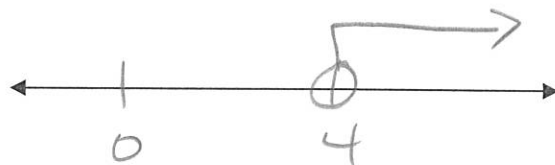


Solve each inequality and graph the solutions.

$$12. \quad \begin{array}{r} 2x + 3 < 9 \\ +3 - 3 \\ \hline 2x < 6 \\ \frac{2x}{2} < \frac{6}{2} \end{array} \quad x < 3$$



$$13. \quad \begin{array}{r} 3t - 2 > 10 \\ +2 + 2 \\ \hline 3t > 12 \\ \frac{3t}{3} > \frac{12}{3} \end{array} \quad t > 4$$



Solve each inequality.

$$14. \quad \begin{array}{r} 2(x - 3) > -1 \\ \frac{2(x - 3)}{2} > \frac{-1}{2} \\ x - 3 > -\frac{1}{2} \\ +3 + 3 \\ \hline x > 2\frac{1}{2} \end{array}$$

or

$$\begin{array}{r} 2(x - 3) > -1 \\ 2x - 6 > -1 \\ +6 + 6 \\ \hline 2x > 5 \\ \frac{2x}{2} > \frac{5}{2} \end{array}$$

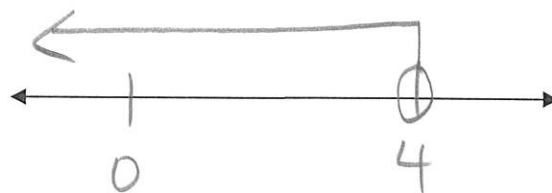
$$x > \frac{5}{2} \text{ or } 2\frac{1}{2}$$

$$15. \quad \begin{array}{r} 2 + (-6) > 0.8p \\ -4 > 0.8p \\ \frac{-4}{0.8} > \frac{0.8p}{0.8} \\ -5 > p \end{array}$$

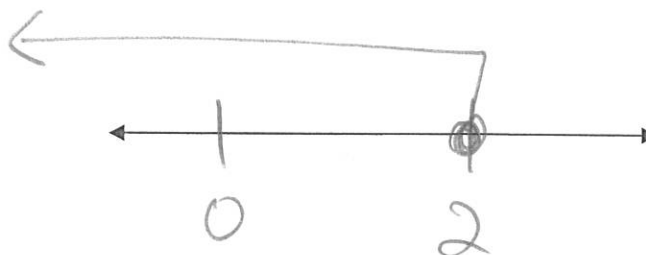
$$p < -5$$

Solve each inequality and graph the solutions.

$$16. \quad \begin{array}{r} 5x < 3x + 8 \\ -3x - 3x \\ \hline 2x < 8 \\ \frac{2x}{2} < \frac{8}{2} \\ \hline x < 4 \end{array}$$



$$17. \quad \begin{array}{r} r - 8 \geq 3r - 12 \\ -3r - 3r \\ \hline -2r - 8 \geq -12 \\ +8 + 8 \\ \hline -2r \geq -4 \\ \frac{-2r}{-2} \geq \frac{-4}{-2} \end{array} \quad r \leq 2$$



Solve each inequality.

18. $3(y+6) > 2(y+4)$

$$\begin{array}{r} 3y + 18 > 2y + 8 \\ -2y \quad -2y \\ \hline y + 18 > 8 \\ -18 \quad -18 \\ \hline y > -10 \end{array}$$

True Statement $2 \geq 1$ ∞ infinite Solutions

False Statement $-2 \geq 1$ \emptyset No Solution

19. $3(1-x) \geq -3(x+2)$

$$\begin{array}{r} 3 - 3x \geq -3x - 6 \\ +3x \quad +3x \\ \hline 3 \geq -6 \\ \text{True} \end{array}$$

∞
Inf. sol

Solve each compound inequality and graph the solutions.

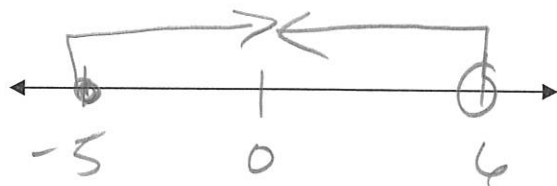
20. $-2 \leq x+3 < 9$

$$\begin{array}{r} -3 \quad -3 \quad -3 \\ \hline -5 \leq x < 6 \end{array}$$

$x \geq -5$ and $x < 6$

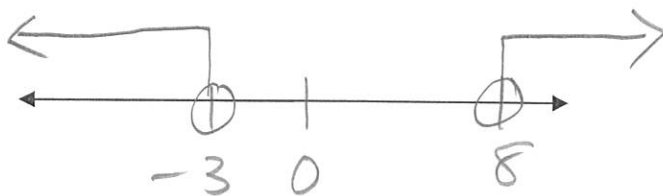
And
 $2 \leq x < 4$
Shade together
 $\rightarrow \leftarrow$

OR
 $x \geq 1$ or $x \leq -2$
Shade away
 $\leftarrow \rightarrow$



21. $m+2 < -1$ OR $m-2 > 6$

$$\begin{array}{r} -2 \quad -2 \quad +2 \quad +2 \\ \hline m < -3 \quad \text{or} \quad m > 8 \end{array}$$



Solve each inequality and graph the solutions.

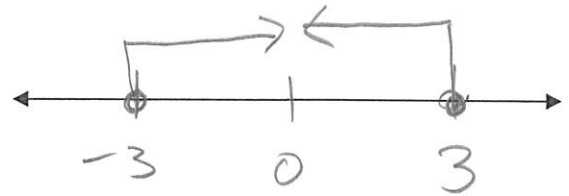
22. $|x| + 9 \leq 12$

$$\frac{-9 \quad -9}{|x| \leq 3}$$

Case 1 $x \leq 3$ and Case 2 $x \geq -3$

Case 1
stays the same w/out $||$

Case 2
Change inequality.
Change negative w/out $||$



23. $|x+7| - 15 < 6$

$$\frac{+15 \quad +15}{|x+7| < 21}$$

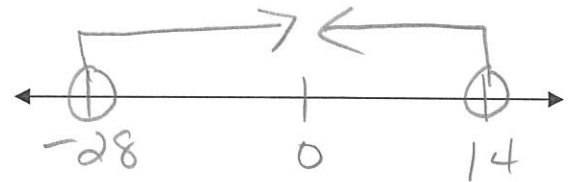
Case 1

$$\frac{-7 \quad -7}{x+7 < 21}$$

Case 2

$$\frac{-7 \quad -7}{x+7 > -21}$$

$$x < 14 \text{ and } x > -28$$



Solve each inequality.

24. $|x-2| \leq 14$

Case 1

$$\frac{+2 \quad +2}{x-2 \leq 14}$$

Case 2

$$\frac{+2 \quad +2}{x-2 \geq -14}$$

$$x \leq 16 \text{ and } x \geq -12$$

25. $7 + |3x| > 13$

$$\frac{-7 \quad -7}{|3x| > 6}$$

Case 1

$$\frac{3x > 6}{3 \quad 3}$$

Case 2

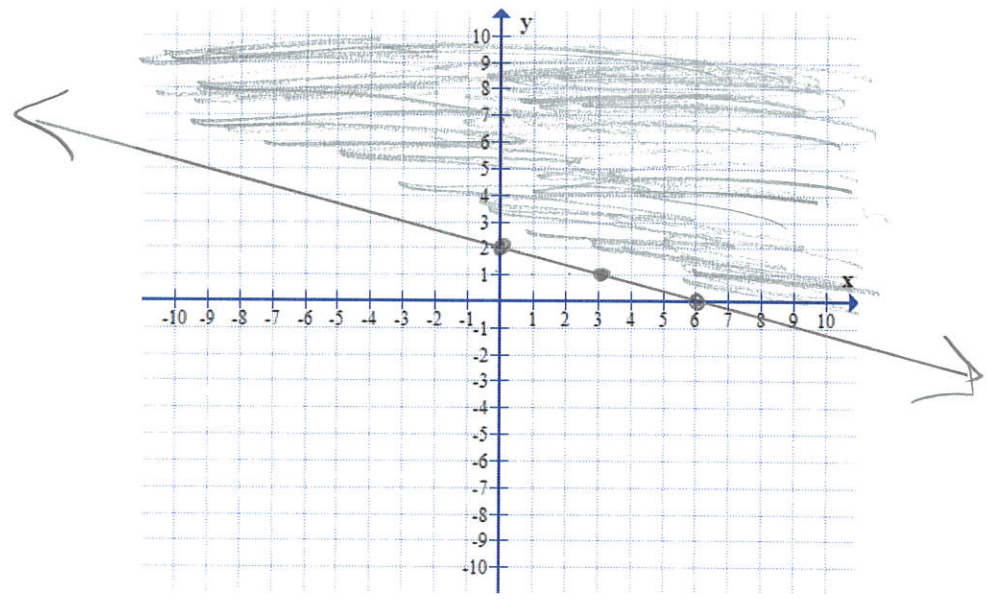
$$\frac{3x < -6}{3 \quad 3}$$

$$x > 2 \text{ or } x < -2$$

$>$ or \geq $<$ or \leq
 Shade above Shade below
Graph the solution of each linear inequality

$>$ or $<$ \geq or \leq
 dotted Line Solid Line

21. $y \geq -\frac{1}{3}x + 2$



22. $-2x - y < 1$
 $+2x \quad +2x$

$$\frac{-y < 2x + 1}{-1 \quad -1 \quad -1}$$

$$y > -2x - 1$$

