

Academic ALC I CHAPTER 6 REVIEW

Name _____

Date _____

LESSON 6.1

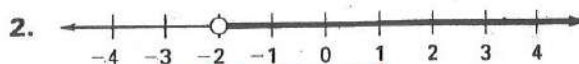
Practice

For use with pages 356-361

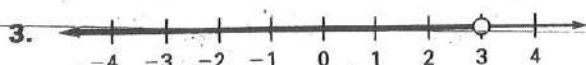
Write an inequality that is represented by the graph.



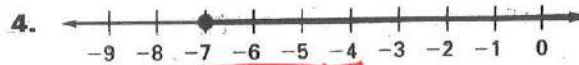
$$x \leq 4$$



$$x > -2$$



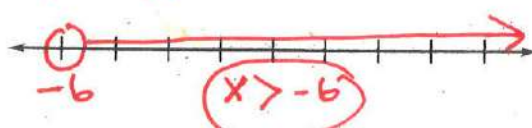
$$x < 3$$



$$x \geq -7$$

Solve the inequality. Graph your solution.

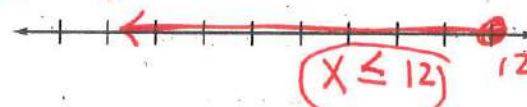
7. $1 < x + 7 \rightarrow -6 < x$



$$x > -6$$

8. $9 > x - 3 \rightarrow 12 > x$

$$12 > x$$



$$x \leq 12$$

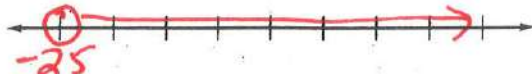
LESSON 6.2

Practice

For use with pages 362-368

Solve the inequality. Graph your solution.

6. $\frac{m}{5} > -5 \cdot 5 \rightarrow m > -25$



$$m > -25$$

7. $\frac{c}{-10} \leq -2 \cdot -10 \rightarrow c \geq 20$



$$c \geq 20$$

8. $-8n > -16 \rightarrow n < 2$



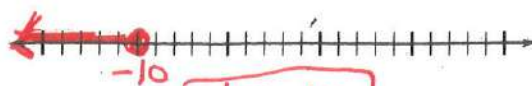
$$n < 2$$

9. $4z < -28 \rightarrow z < -7$



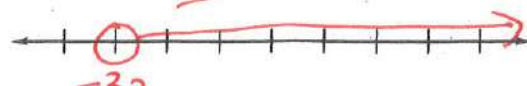
$$z < -7$$

10. $-2.5 \leq -\frac{x}{2} \rightarrow -10 \geq x$



$$x \leq -10$$

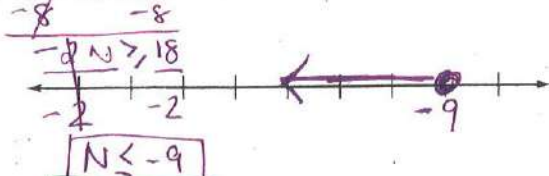
11. $\frac{w}{-4} < 8 \rightarrow w > -32$



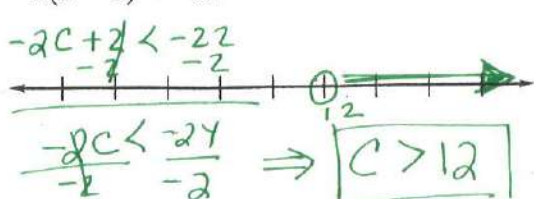
$$w > -32$$

Solve the inequality. Graph your solution.

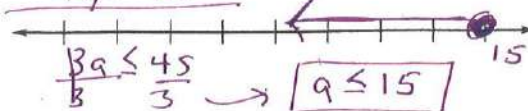
3. $8 - 2n \geq 26$



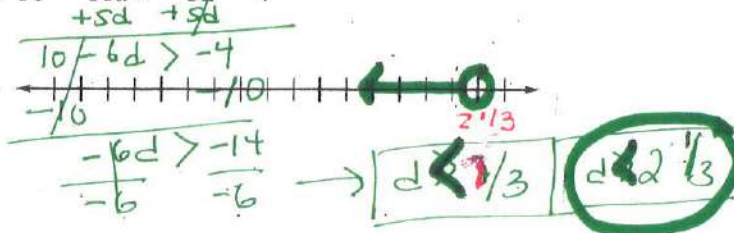
6. $-2(c - 1) < -22$



4. $3(a - 4) \leq 33$



8. $10 - 11d > -5d - 4$



Solve the inequality, if possible.

11. $6y - 9 \leq 4y + 2y - 16$

$$\begin{array}{r} 6y - 9 \leq 4y + 2y - 16 \\ -6y \quad -6y \\ \hline -9 \leq -16 \quad (F) \end{array}$$

$X = \text{NO SOLUTION}$

12. $7p - 11p + 3 \geq 3 - 4p$

$$\begin{array}{r} -4p + 3 \geq -4p + 3 \\ +4p \quad +4p \\ \hline 3 \geq 3 \quad T \end{array}$$

$X = \text{ALL REAL \#}'s$

19. $4(3 - 2x) > 2(6 - 4x)$

$$\begin{array}{r} 12 - 8x > 12 - 8x \\ +8x \quad +8x \\ \hline 12 > 12 \quad (F) \end{array}$$

$X = \text{NO SOLUTION}$

20. $2(5 - a) > 4a + 13 - 6a$

$$\begin{array}{r} 10 - 2a > -2a + 13 \\ +2a \quad +2a \\ \hline 10 > 13 \quad (F) \end{array}$$

$X = \text{NO SOLUTION}$

23. $2m + 10 - 7m \leq 5(4 - m)$

$$\begin{array}{r} -5m + 10 \leq 20 - 5m \\ +5m \quad +5m \\ \hline 10 \leq 20 \quad (T) \end{array}$$

$X = \text{ALL REAL \#}'s$

24. $6(1 - 2n) \leq 5 - 12n$

$$\begin{array}{r} 6 - 12n \leq 5 - 12n \\ +12n \quad +12n \\ \hline 6 \leq 5 \quad (F) \end{array}$$

$X = \text{NO SOLUTION}$

Practice

For use with pages 379-388

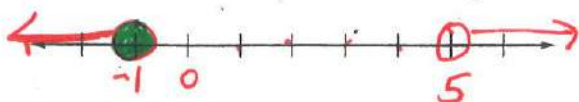
Translate the verbal phrase into an inequality. Then graph the inequality.

1. All real numbers that are less than or equal to -3 and greater than or equal to -8



$$x \leq -3 \text{ AND } x \geq -8$$

2. All real numbers that are greater than 5 or less than or equal to -1

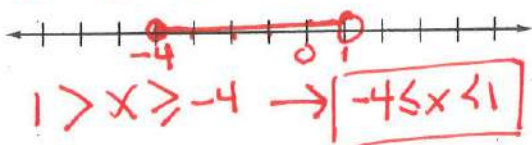


$$x > 5 \text{ OR } x \leq -1$$

Solve the inequality. Graph your solution.

6. $-5 < -5x \leq 20$

$$\frac{-5}{-5} < \frac{-5x}{-5} \leq \frac{20}{-5}$$



$$-4 < x \leq 1 \rightarrow -4 \leq x < 1$$

7. $0 \leq 2(x-3) < 8$

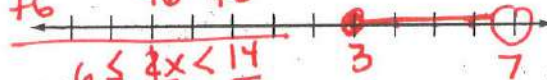
$$0 \leq 2x - 6 < 8$$

$$+6 \quad +6 \quad +6$$

$$6 \leq 2x < 14$$

$$\frac{6}{2} \leq \frac{2x}{2} < \frac{14}{2}$$

$$3 \leq x < 7$$



8. $3x + 2 < 8$ or $-x + 3 < -2$

$$\frac{-2}{-3} \quad \frac{-3}{-1}$$

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

$$x < 2 \text{ OR } x > 5$$



9. $2(x+4) < 6$ or $-x - 3 \leq -7$

$$2x + 8 < 6$$

$$\frac{-8}{2} \quad \frac{-6}{2}$$

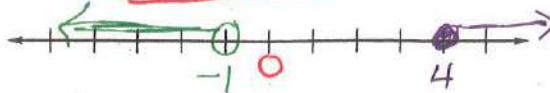
$$2x < -2$$

$$x < -1$$

$$\frac{-3}{-1} \quad \frac{-7}{-1}$$

$$-x \leq -4$$

$$x \geq 4$$



ADD $A+B$

(A) $x < 5$ AND $x+5 > 20$

$$x < 5 \text{ AND } x > 15$$



"And" must intersect

FINAL ANSWER: $x = \text{NO SOLUTION}$

(B) $x < 5$ OR $\frac{x}{2} > -2$

$$x < 5 \text{ OR } x > -4$$



FINAL ANSWER: $x = \text{ALL REAL NUMBERS}$

Solve the equation.

1. $|x| = 9$

$x = \pm 9$

7. $|4x + 1| = 15$

$$\begin{array}{l} 4x + 1 = 15 \\ -1 \quad -1 \\ \hline 4x = 14 \\ \frac{4x}{4} = \frac{14}{4} \\ x = 3.5 \end{array} \quad \begin{array}{l} 4x + 1 = -15 \\ -1 \quad -1 \\ \hline 4x = -16 \\ \frac{4x}{4} = \frac{-16}{4} \\ x = -4 \end{array}$$

11. $4|5x - 1| = 36$

$|5x - 1| = 9$

$$\begin{array}{l} 5x - 1 = 9 \\ +1 \quad +1 \\ \hline 5x = 10 \\ \frac{5x}{5} = \frac{10}{5} \\ x = 2 \end{array} \quad \begin{array}{l} 5x - 1 = -9 \\ +1 \quad +1 \\ \hline 5x = -8 \\ \frac{5x}{5} = \frac{-8}{5} \\ x = -1.6 \end{array}$$

13. $|x + 3| - 4 = -1$

$|x + 3| = 3$

$$\begin{array}{l} x + 3 = +3 \\ -3 \quad -3 \\ \hline x = 0 \end{array} \quad \begin{array}{l} x + 3 = -3 \\ -3 \quad -3 \\ \hline x = -6 \end{array}$$

19. $-\frac{1}{3}|1 - 8x| = 2$

$|1 - 8x| = -6$

$x = \text{NO SOLUTION}$

2. $|x| = -25$

$x = \text{NO SOLUTION}$

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

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

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

12. $2|6x + 5| - 1 = 25$

$$\begin{array}{l} 2|6x + 5| = 26 \\ \frac{2}{2} \quad \frac{26}{2} \\ |6x + 5| = 13 \\ 6x + 5 = 13 \\ -5 \quad -5 \\ \hline 6x = 8 \\ \frac{6x}{6} = \frac{8}{6} \\ x = 1\frac{1}{3} \end{array}$$

$$\begin{array}{l} 6x + 5 = -13 \\ -5 \quad -5 \\ \hline 6x = -18 \\ \frac{6x}{6} = \frac{-18}{6} \\ x = -3 \end{array}$$

16. $-6|10 - 2x| = 24$

$|10 - 2x| = -4$

$x = \text{NO SOLUTION}$

17. $-3|4x + 3| = -9$

$|4x + 3| = 3$

$$\begin{array}{l} 4x + 3 = 3 \\ -3 \quad -3 \\ \hline 4x = 0 \\ \frac{4x}{4} = \frac{0}{4} \\ x = 0 \end{array} \quad \begin{array}{l} 4x + 3 = -3 \\ -3 \quad -3 \\ \hline 4x = -6 \\ \frac{4x}{4} = \frac{-6}{4} \\ x = -1.5 \end{array}$$

a. $|2x| = 4$ $x = -2, 2$

b. $|x + 5| = 0$ $x = -5$

c. $|-5x + 10| = -5$ $x = \text{NO SOL.}$

tell whether the ordered pair is a solution of the inequality.

1. $x + y > -9$; $(0, 0)$

$$0 + 0 > -9$$

$$0 > -9 \text{ (T)}$$

SOLUTION

2. $x - y \geq 8$; $(14, 9)$

$$14 - 9 \geq 8$$

$$5 \geq 8 \text{ (F)}$$

NO SOLUTION

3. $2x - y > 4$; $(-6, -15)$

$$2(-6) - (-15) > 4$$

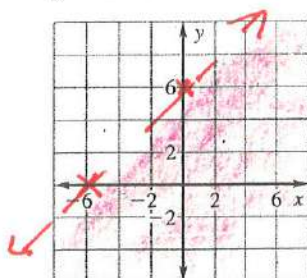
$$-12 + 15 > 4$$

$$3 > 4 \text{ (F)}$$

NO SOLUTION

Graph the inequality.

10. $y - x < 6$

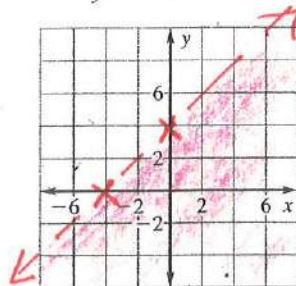


$x: -6 \quad y: 6$

$y < x + 6$

$(0, 0) \quad 0 < 6 \text{ (T)}$

11. $x - y > -4$

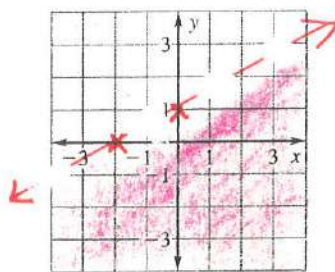


$x: -4 \quad y: 4$

$y > -x - 4 \rightarrow y < x + 4$

$(0, 0) \quad 0 > -4 \text{ (T)}$

12. $2y - x < 2$

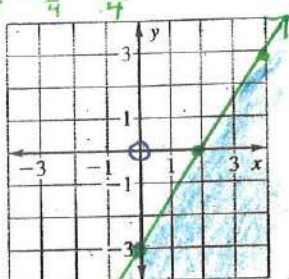


$x: -2 \quad y: 1$

$2y < \frac{x}{2} + 2 \rightarrow y < \frac{1}{2}x + 1$

$(0, 0) \quad 0 < 2 \text{ (T)}$

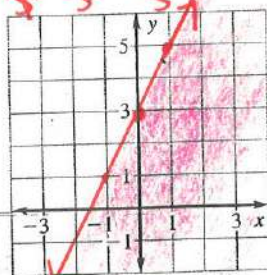
13. $4y \leq 6x - 12$



$y \leq \frac{3}{2}x - 3$

$T(0, 0) \quad 0 \leq -12 \text{ (F)}$

14. $5y \leq 10x + 15$



$y \leq 2x + 3$

$(0, 0) \quad 0 \leq 15 \text{ (T)}$

15. $-6y + 6 \geq -18x$



$-6y \geq -18x - 6$

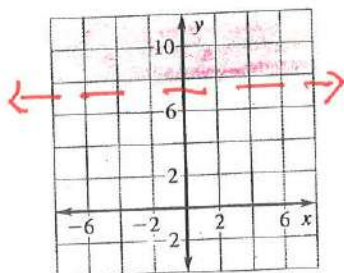
$y \leq 3x + 1$

$T(0, 0)$

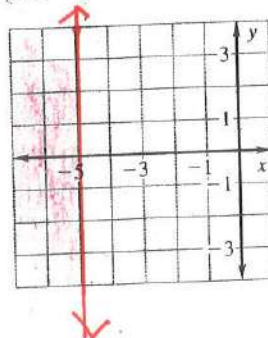
$-6(0) + 6 \geq -18(0)$

$6 \geq 0 \text{ (T)}$

19. $y > 7$



20. $x \leq -5$



Hi