

Academic ALC I CHAPTER 6 REVIEW

Name _____

Date _____

LESSON
6.1

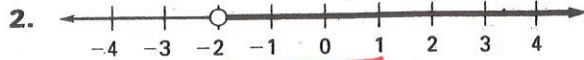
Practice

For use with pages 356-361

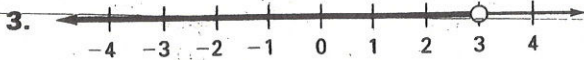
Write an inequality that is represented by the graph.



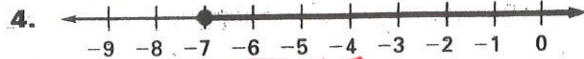
$$x \leq 4$$



$$x > -2$$



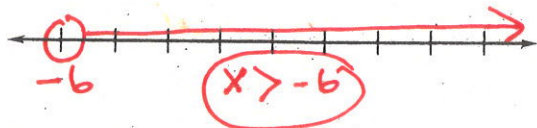
$$x < 3$$



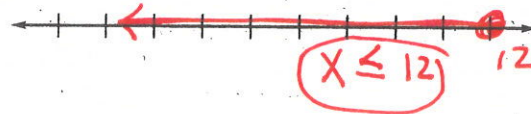
$$x \geq -7$$

Solve the inequality. Graph your solution.

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



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



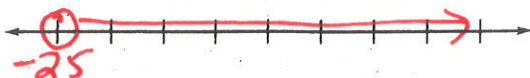
LESSON
6.2

Practice

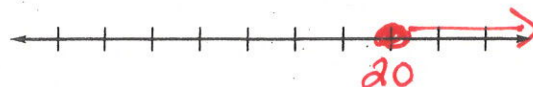
For use with pages 362-368

Solve the inequality. Graph your solution.

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



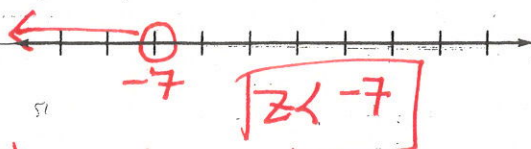
7. $\frac{c}{-10} \leq -2 \rightarrow c > 20$



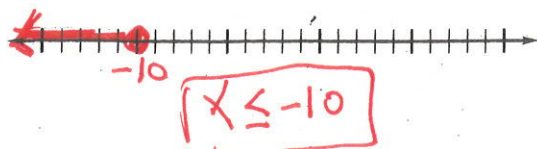
8. $-8n > -16 \rightarrow n < 2$



9. $4z < -6z \rightarrow -7 > z$



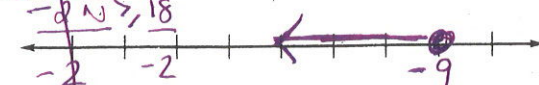
10. $-2.5 \leq -\frac{x}{2} \rightarrow -10 \geq x$

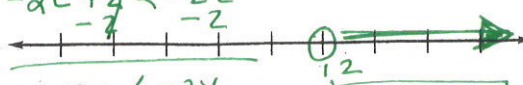



11. $\frac{w}{-4} < 8 \rightarrow w > -32$




Solve the inequality. Graph your solution.

3. $8 - 2n \geq 26$
 $\frac{-8}{-2} \frac{-2n}{-2} \geq \frac{18}{-2}$
 $n \leq -9$


6. $-2(c-1) < -22$
 $\frac{-2c+2}{-2} < \frac{-22}{-2}$
 $c > 12$


4. $3(a-4) \leq 33$
 $\frac{3a-12}{3} \leq \frac{33}{3}$
 $a \leq 15$


8. $10 - 11d > -5d - 4$
 $\frac{10-11d}{-6} > \frac{-4-5d}{-6}$
 $d < 2\frac{1}{3}$


Solve the inequality, if possible.

11. $6y - 9 \leq 4y + 2y - 16$
 $\frac{6y-9}{-6} \leq \frac{6y-16}{-6}$
 $-9 \leq -16$ (F)

X = NO SOLUTION

12. $7p - 11p + 3 \geq 3 - 4p$
 $\frac{-4p+3}{+4p} \geq \frac{-4p+3}{+4p}$
 $3 \geq 3$ T

X = ALL REAL #'S

19. $4(3-2x) > 2(6-4x)$
 $\frac{12-8x}{+8x} > \frac{12-8x}{+8x}$
 $12 > 12$ (F)

X = NO SOLUTION

20. $2(5-a) > 4a + 13 - 6a$
 $\frac{10-2a}{+2a} > \frac{-2a+13}{+2a}$
 $10 > 13$ (F)

X = NO SOLUTION

23. $2m + 10 - 7m \leq 5(4-m)$
 $\frac{-5m+10}{+5m} \leq \frac{20-5m}{+5m}$
 $10 \leq 20$ (T)

X = ALL REAL #'S

24. $6(1-2n) \leq 5 - 12n$
 $\frac{6-12n}{+12n} \leq \frac{5-12n}{+12n}$
 $6 \leq 5$ (F)

X = 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



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

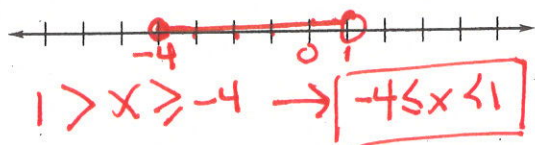
2. All real numbers that are greater than 5 or less than or equal to -1



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

Solve the inequality. Graph your solution.

6. $-5 < -5x \leq 20$
 $\frac{-5}{-5} < \frac{-5x}{-5} \leq \frac{20}{-5}$



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

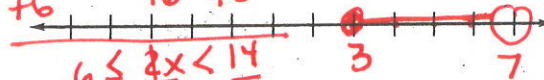
7. $0 \leq 2(x-3) < 8$

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

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

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

$$3 \leq x < 7$$



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

$$\frac{3x + 2}{-2} < \frac{8}{-2} \quad \frac{-x + 3}{-1} < \frac{-2}{-1}$$

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



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

$$2x + 8 < 6$$

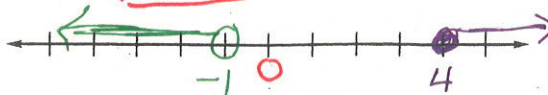
$$\frac{2x + 8}{2} < \frac{6}{2}$$

$$x < -1$$

$$\frac{-x - 3}{-1} \leq \frac{-7}{-1}$$

$$x \geq 4$$

$$x < -1 \text{ OR } x \geq 4$$



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. $|4x + 1| = 15$

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

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

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

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

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

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

$|1 - 8x| = -6$

$x = \text{NO SOLUTION}$

2. $|x| = -25$

$x = \text{NO SOLUTION}$

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

$$\begin{array}{l} 5-2x=9 \\ -5 \quad -5 \\ \hline -2x=4 \\ \frac{-2x}{-2}=\frac{4}{-2} \\ \boxed{x=-2} \end{array} \quad \begin{array}{l} 5-2x=-9 \\ -5 \quad -5 \\ \hline -2x=-14 \\ \frac{-2x}{-2}=\frac{-14}{-2} \\ \boxed{x=7} \end{array}$$

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

$$\begin{array}{l} 2|6x+5|=26 \\ \frac{2|6x+5|}{2}=\frac{26}{2} \\ |6x+5|=13 \\ 6x+5=13 \\ -5 \quad -5 \\ \hline 6x=8 \\ \frac{6x}{6}=\frac{8}{6} \\ \boxed{x=1\frac{1}{3}} \end{array} \quad \begin{array}{l} 6x+5=-13 \\ -5 \quad -5 \\ \hline 6x=-18 \\ \frac{6x}{6}=\frac{-18}{6} \\ \boxed{x=-3} \end{array}$$

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

$|10 - 2x| = -6$
 $x = \text{NO SOLUTION}$

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

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

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

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

c) $|-5x + 10| = -5$
 $x = \text{NO SOLUTION}$

LESSON 6.7

Practice

For use with pages 404-412

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

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

$0 + 0 > -9$
 $0 > -9$ (T)

SOLUTION

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

$14 - 9 \geq 8$
 $5 \geq 8$ (F)

NO SOLUTION

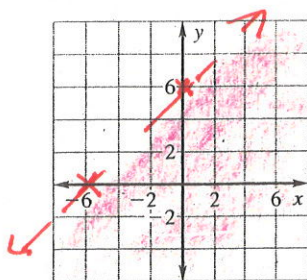
3. $2x - y > 4$; (-6, -15)

$2(-6) - (-15) > 4$
 $-12 + 15 > 4$
 $3 > 4$ (F)

NO SOLUTION

Graph the inequality.

10. $y - x < 6$

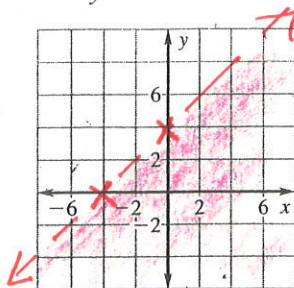


$x: -6 \quad y: 6$

$y < x + 6$

(0, 0) $0 < 6$ (T)

11. $x - y > -4$

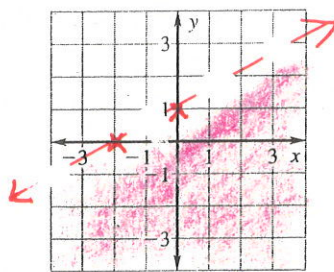


$x: -4 \quad y: 4$

$\frac{1}{1}y > -x - 4$
 $\frac{1}{1}y > \frac{-x-4}{1} \rightarrow y < x + 4$

(0, 0) $0 > -4$ (T)

12. $2y - x < 2$

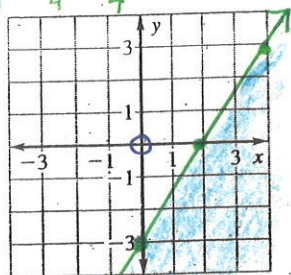


$x: -2 \quad y: 1$

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

(0, 0) $0 < 2$ (T)

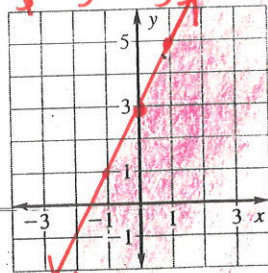
13. $4y \leq 6x - 12$



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

T(0, 0) $0 \leq -12$ (F)

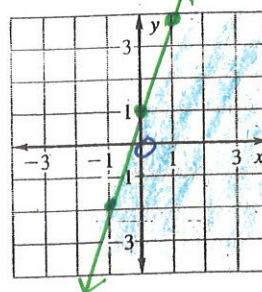
14. $5y \leq 10x + 15$



$y \leq 2x + 3$

(0, 0) $0 \leq 15$ (T)

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

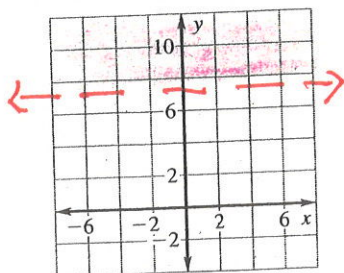


$-\frac{6}{-6}y \geq \frac{-18x-6}{-6}$

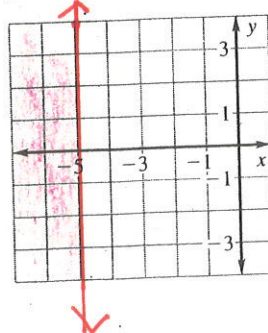
$y \leq 3x + 1$

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

19. $y > 7$



20. $x \leq -5$



Hi