3.4 HW ?'s

45, 40, 49, 44, 42, 48

40 $\frac{2}{3}x - \cancel{5} > 7$

$+\cancel{5} \qquad +5$

$\frac{\cdot\cancel{3}}{\cdot\cancel{2}} \cdot \frac{\cdot\cancel{2}}{\cdot\cancel{3}}x > \frac{\cancel{12}^{6}}{1} \cdot \frac{3}{\cancel{2}_{1}}$

$x > 18$

42. $5 - x - 2 > 3$

$$\cancel{3} - x > 3$$
$$-\cancel{3} \qquad -3$$
$$-x > 0$$
$$\frac{-x}{-1} > \frac{0}{-1}$$
$$x < 0$$

44.

$$\frac{1}{6} - \frac{2}{3}m \geq \frac{1}{4} \qquad \frac{3}{12}$$

$$-\frac{1}{6} \qquad\qquad \frac{-1}{6} \qquad \frac{-2}{12}$$

$$+\frac{3}{12} \cdot \quad +\frac{2}{3}m \geq \frac{1}{4} \cdot -\frac{3}{2}$$

$$m \leq \frac{-1}{8}$$

45

$$4 - 1(r - 2) > 3 - 5$$

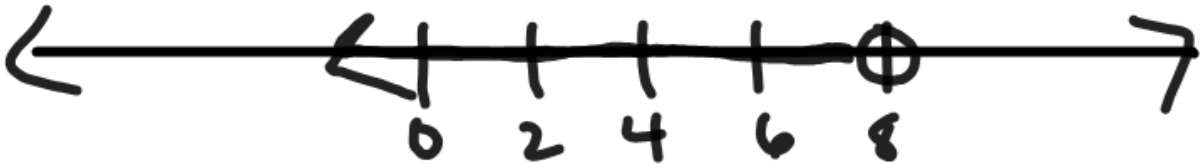
$$4 - r + 2 > -2$$

$$4 - r > -2$$

$$-4 \qquad -6$$

$$\frac{-r}{-1} > \frac{-8}{-1}$$

$$r < 8$$



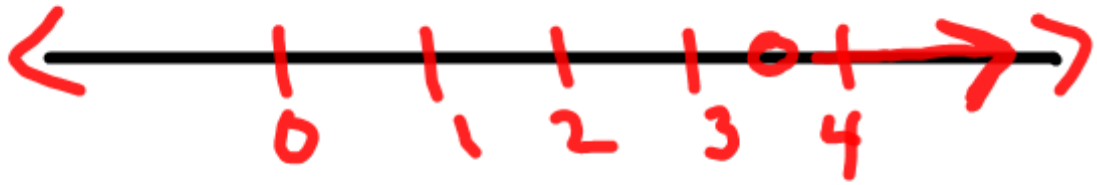
48 $-4 - 2n + 4n > 7 - 2^2$

$-4 + 2n > 3$

$+4 \qquad +4$

$\frac{2n}{2} > \frac{7}{2}$

$n > 3\frac{1}{2}$



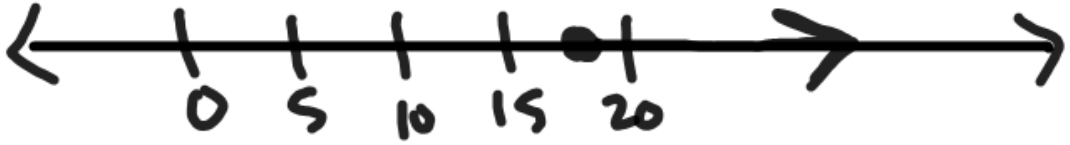
49. $\frac{1}{4}(p-10) \geq 6-4$

$\frac{4}{1} \cdot \frac{1}{4}(p-10) \geq 2 \cdot 4$

$p - 10 \geq 8$

$+10 \qquad +10$

$p \geq 18$

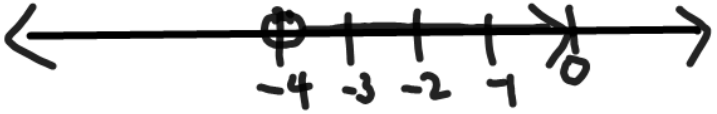


3.5 Solving Inequalities w/ Variables on Both Sides

CA # 4.0, 5.0 10/5/10

Ex.1

$$3x + 8 > x$$
$$-x \qquad -x$$
$$2x + 8 > 0$$
$$-8 \qquad -8$$
$$2x > -8$$
$$\frac{2x}{2} > \frac{-8}{2}$$
$$x > -4.$$



Ex.1B

$$6x - 1 \le 3.5x + 4$$

$$-3.5x \qquad\qquad -3.5x$$

$$2.5x - 1 \le 4$$

$$+1 \qquad\qquad +1$$

$$2.5x \le 5$$

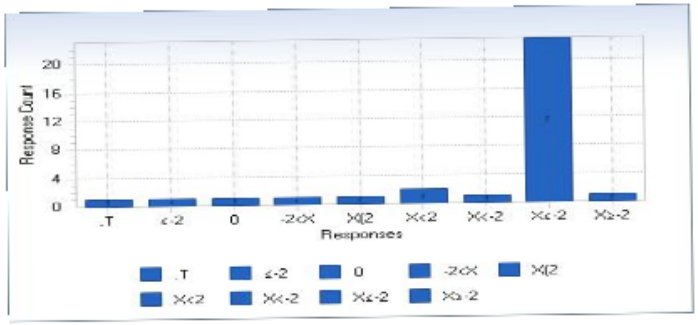
$$\frac{2.5x}{2.5} \le \frac{5}{2.5}$$

$$\begin{array}{r} 5 \\ \cancel{6}.10 \\ -\ 3.5 \\ \hline 2.5 \end{array}$$

$$\begin{array}{r} 2. \\ 2.5\overline{)5.000} \end{array}$$

$$x \le 2$$

✓1A $4x \geq 7x + 6$



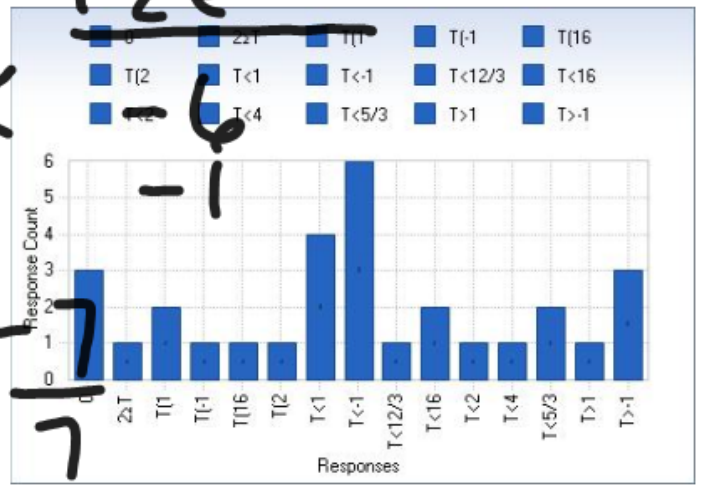
✓1B $5t + 1 < -2t - 6$

$+2t \qquad +2t$

$7t + 1 < -6$

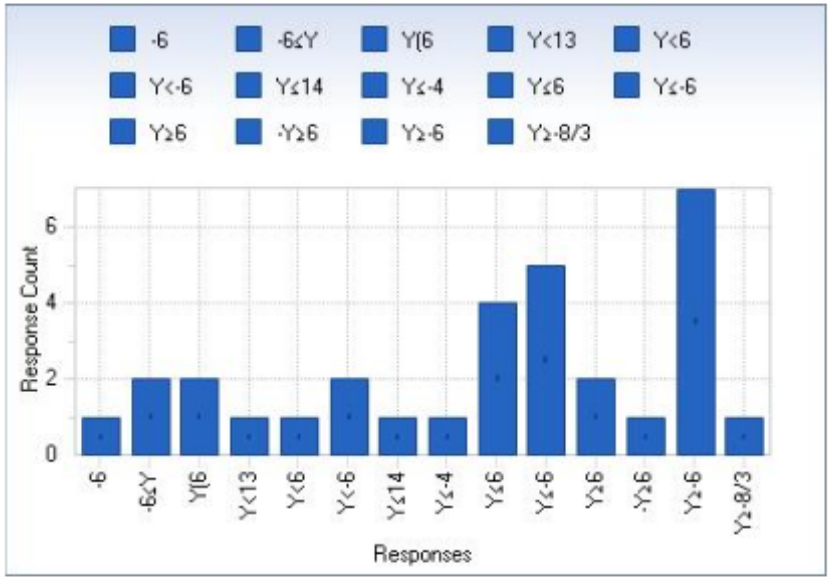
$-1 \qquad -1$

$\frac{7t}{7} < \frac{-7}{7}$



$t < -1$

$$y \le 4y + 18$$
$$-4y \qquad -4y$$
$$-3y \le 18$$
$$+3 \qquad -3$$
$$y \ge -6$$



Ex. 4A

$$\begin{array}{r} \cancel{x}+5 \\ -\cancel{x} \\ \hline \end{array} \geq \begin{array}{r} \cancel{x}+3 \\ -\cancel{x} \\ \hline \end{array}$$

$$5 \geq 3$$

all real #'s make the inequality true

Ex. 4B $\quad 2(x+3) < 5+2x$

$$\begin{aligned} \cancel{2x}+6 &< 5+\cancel{2x} \\ -\cancel{2x} \qquad & \qquad -\cancel{2x} \\ \hline 6 &< 5 \end{aligned}$$

False

No Values for x that make inequality true

3.7 Absolute Value Inequalities

$$|x| + 4 = 8$$
$$-4 \qquad -4$$

* $<$ and

* $>$ and

$$|x| = 4$$
$$x = 4, -4$$

Ex. $|x| + 3 < 12$
$$-3 \qquad -3$$

P.165 #
1-19

$$|x| < 9$$

P181 #
1-3

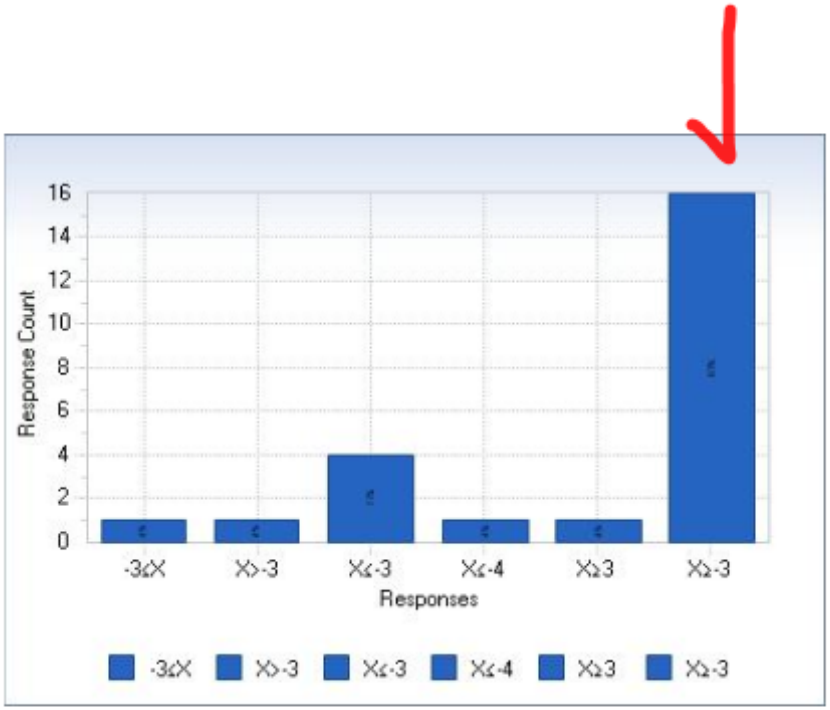
$x < 9$ and $x > -9$

$$-4 \geq x$$

$$x \qquad -4$$

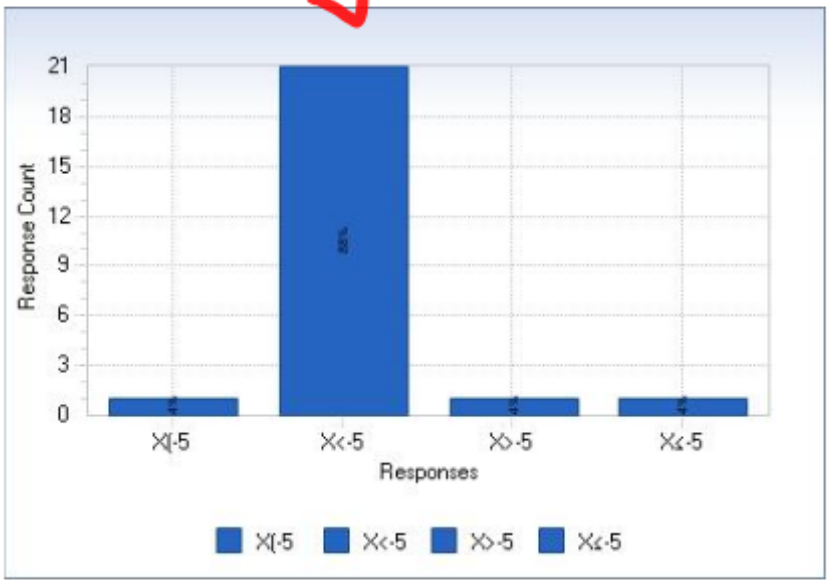
$-3 \leq X$

$X \geq -3$


16
14
12
10
8
6
4
2
0
Response Count
-3≤X
X>-3
X<-3
X<-4
X≥3
X≥-3
Responses
-3≤X
X>-3
X<-3
X<-4
X≥3
X≥-3

$-5 > x$

good

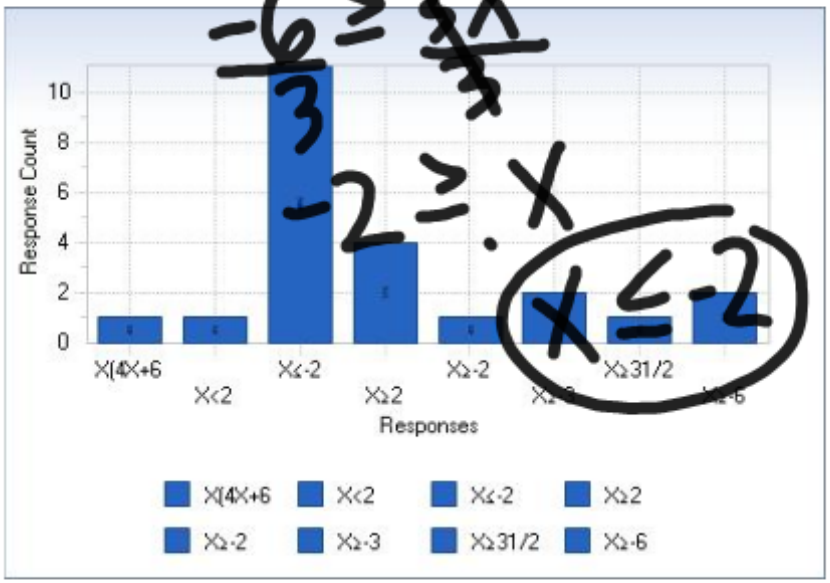

21
18
15
12
9
6
3
0
Response Count
X[-5
X<-5
X>-5
X≤-5
Responses
X[-5
X<-5
X>-5
X≤-5

V/A

$$4x \geq 7x + 6$$
$$-7x \qquad -7x$$
$$-3x \geq 6$$
$$-3 \qquad -3$$
$$x \leq -2$$

or

$$4x \geq 7x + 6$$
$$-4x \qquad -4x$$
$$0 \geq 3x + 6$$
$$-6 \qquad -6$$
$$-6 \geq 3x$$
$$\frac{-6}{3} \geq \frac{3x}{3}$$
$$-2 \geq x$$
$$x \leq -2$$



Ex. 1B

or

$$|x-8|+5 \geq 11$$
$$\underline{\quad -5 \quad -5}$$
$$|x-8| \geq 6$$

$$x-8 \geq 6 \quad \text{or} \quad x-8 \leq -6$$
$$+8 \quad +8 \qquad\qquad +8 \quad +8$$
$$x \geq 14 \quad \text{or} \quad x \leq 2$$