

ACAD. ALGI

CHAPTER 6 REVIEW HW

Pg 415 #'s 5-29

$$\textcircled{5} \quad \begin{array}{r} x + 5 > -13 \\ -5 \quad -5 \end{array}$$

$$\boxed{x > -18}$$



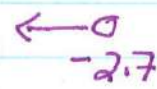
$$\textcircled{6} \quad \begin{array}{r} m + 9 > -4 \\ +9 \quad +9 \end{array}$$

$$\boxed{m > -5}$$



$$\textcircled{7} \quad \begin{array}{r} 5 + 3.7 < 1 \\ -3.7 \quad -3.7 \end{array}$$

$$\boxed{5 < -2.7}$$



$$\textcircled{8} \quad \begin{array}{r} 2 \cdot \frac{P}{2} \leq 5.2 \\ \cancel{2} \quad \cancel{2} \end{array}$$

$$\boxed{P \leq 10}$$



$$\textcircled{9} \quad \begin{array}{r} \cancel{4.5} \left(\frac{N}{\cancel{-4.5}} \right) < \left(\cancel{-8} \right) \cdot \cancel{-4.5} \end{array}$$

$$\boxed{N > 36}$$



$$\textcircled{10} \quad \begin{array}{r} -3x > 27 \\ \cancel{-3} \quad \cancel{-3} \end{array}$$

$$\boxed{x < -9}$$



$$\textcircled{11} \quad \begin{array}{r} 2y \geq 18 \\ \cancel{2} \quad \cancel{2} \end{array}$$

$$\boxed{y \geq 9}$$



* Remember to reverse the symbol when you MULTIPLY OR DIVIDE THE VARIABLE BY A NEGATIVE NUMBER

- (12) KEY INFO: ATHLETE COMPETES IN 6 EVENTS
 AVERAGE per event is ≤ 9.7 pts
 FIND THE TOTAL POSSIBLE POINTS

VARIABLE $X = \text{TOTAL \# of points}$

EQUATION $6\left(\frac{X}{6}\right) \leq (9.7) 6$

SOLVE $\rightarrow$

$X \leq 58.2$

Answer
in
words $\rightarrow$

The athlete can score at most 58.2 points

(13) $2G + 11 < 25$

$$\begin{array}{r} -11 \quad -11 \\ \hline 2G < 14 \\ \hline \frac{2G}{2} < \frac{14}{2} \end{array}$$

$G < 7$

$\leftarrow \bigcirc 7$

(14) $\frac{2}{3}R - 4 > 1$

$$\begin{array}{r} +4 \quad +4 \\ \hline \end{array}$$

$\left(\frac{3}{2}\right) \frac{2}{3}R > 5 \left(\frac{3}{2}\right)$

mult
by reciprocal

$R > \frac{15}{2}$

OR $R > 7.5$
 OR $R > 7\frac{1}{2}$

$\bigcirc \rightarrow 7\frac{1}{2}$

(15) $1 - 3X \leq -14 + 2X$

$$\begin{array}{r} -2X \quad -2X \\ \hline 1 - 5X \leq -14 \\ \hline -1 \quad -1 \\ \hline -5X \leq -15 \\ \hline \frac{-5X}{-5} \leq \frac{-15}{-5} \end{array}$$

$\rightarrow X \geq 3$

$\bigcirc \rightarrow 3$

$$(16) \quad 3(Q+1) < 3Q+7$$

$$\begin{array}{r} 3Q+3 < 3Q+7 \\ -3Q \quad -3Q \\ \hline \end{array}$$

$$3 < 7 \quad T$$

X = ALL REAL NUMBERS

$$(17) \quad 8(T-1) > -8+8T$$

$$\begin{array}{r} 8T-8 > 8T-8 \\ -8T \quad -8T \\ \hline \end{array}$$

$$-8 > -8 \quad F$$

NOTICE THE
VARIABLE
DROPPED
OUT

X = NO SOLUTION

$$(18) \quad -3(2N-1) > 1-8N$$

$$\begin{array}{r} -6N+3 > 1-8N \\ +8N \quad +8N \\ \hline \end{array}$$

$$\begin{array}{r} 2N+3 > 1 \\ -3 \quad -3 \\ \hline \end{array}$$

$$\begin{array}{r} 2N > -2 \\ \frac{2}{2} \quad \frac{-2}{2} \\ \hline \end{array}$$

$$\rightarrow N > -1$$



$$(19) \quad \text{KI: TICKETS} - \$7$$

$$\text{ADD SHIPPING} - \$4$$

DONOT WANT TO
SPEND MORE THAN
\$40

VARIABLE: $X = \# \text{ of tickets}$

$$\text{EQUATION:} \quad 7X+4 \leq 40$$

Solve



$$\begin{array}{r} 7X+4 \leq 40 \\ -4 \quad -4 \\ \hline 7X \leq 36 \\ \frac{7X}{7} \quad \frac{36}{7} \\ \hline \end{array}$$

$$X \leq 5 \frac{1}{7}$$

ANSWER IN
WORDS

You can order at most 5 movie tickets
to spend less than \$40

(20)

$$\begin{array}{r} -6 < 2T - 5 \leq -3 \\ +5 \quad +5 \quad +5 \\ \hline -1 < 2T \leq 2 \\ \frac{-1}{2} < \frac{2T}{2} \leq \frac{2}{2} \end{array}$$

$$\boxed{-\frac{1}{2} < T \leq 1}$$



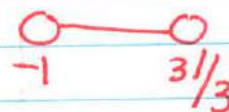
(21)

$$\begin{array}{r} -3 < -3x + 8 < 11 \\ -8 \quad -8 \quad -8 \\ \hline -11 < -3x < 3 \\ \frac{-11}{-3} < \frac{-3x}{-3} < \frac{3}{-3} \end{array}$$

$$\frac{11}{3} > x > -1$$

rewrite to
graph
correctly

$$\boxed{-1 < x < 3\frac{2}{3}}$$



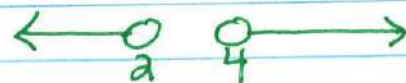
(22)

$$\begin{array}{r} 9S - 6 < 12 \\ +6 \quad +6 \\ \hline 9S < 18 \\ \frac{9S}{9} < \frac{18}{9} \end{array}$$

$$\text{OR } 3S + 1 > 13$$

$$\begin{array}{r} -1 \quad -1 \\ \hline 3S > 12 \\ \frac{3S}{3} > \frac{12}{3} \end{array}$$

$$\boxed{S < 2 \text{ OR } S > 4}$$



(23)

$$\begin{array}{r} -4w + 12 > 10 \\ -12 \quad -12 \\ \hline -4w > -2 \\ \frac{-4w}{-4} > \frac{-2}{-4} \end{array}$$

OR

$$\begin{array}{r} 5w - 14 > -4 \\ +14 \quad +14 \\ \hline 5w > 10 \\ \frac{5w}{5} > \frac{10}{5} \end{array}$$

$$\boxed{w \leq \frac{1}{2} \text{ OR } w > 2}$$



24

$$|R| = 7$$

$$R = \pm 7$$

$$C: |7| = 7 \\ 7 = 7 \checkmark$$

$$C: |-7| = 7 \\ 7 = 7 \checkmark$$

25

$$|A+6| = 2$$

↙

$$A+6 = -2$$

$$\begin{array}{r} -6 \quad -6 \\ \hline \end{array}$$

$$A = -8$$

$$C: |-8+6| = 2$$

$$|-2| = 2$$

$$2 = 2 \checkmark$$

→

$$A+6 = 2$$

$$\begin{array}{r} -6 \quad -6 \\ \hline \end{array}$$

$$A = -4$$

$$C: |-4+6| = 2$$

$$|2| = 2$$

$$2 = 2 \checkmark$$

26

$$|2C+5| = 21$$

$$2C+5 = -21$$

$$\begin{array}{r} -5 \quad -5 \\ \hline \end{array}$$

$$2C = -26$$

$$\begin{array}{r} \frac{2}{2} \quad \frac{2}{2} \\ \hline \end{array}$$

$$C = -13$$

$$C: |2(-13)+5| = 21$$

$$|-21| = 21$$

$$21 = 21 \checkmark$$

+

$$2C+5 = +21$$

$$\begin{array}{r} -5 \quad -5 \\ \hline \end{array}$$

$$2C = 16$$

$$\begin{array}{r} \frac{2}{2} \quad \frac{2}{2} \\ \hline \end{array}$$

$$C = 8$$

$$C: |2(8)+5| = 21$$

$$21 = 21 \checkmark$$

(27)

$$2|x-3| + 1 = 5$$

$$\frac{2|x-3|}{2} = \frac{4}{2}$$

$$|x-3| = 2$$

$$x-3 = -2$$

$$+3 \quad +3$$

$$x = 1$$

$$C: 2|1-3| + 1 = 5$$

$$2|-2| + 1 = 5$$

$$5 = 5 \checkmark$$

$$x-3 = 2$$

$$+3 \quad +3$$

$$x = 5$$

$$C: 2|5-3| + 1 = 5$$

$$5 = 5 \checkmark$$

(28)

$$3|2Q+1| - 5 = -1$$

$$\frac{3|2Q+1|}{3} = \frac{4}{3}$$

$$|2Q+1| = \frac{4}{3}$$

$$2Q+1 = -\frac{4}{3}$$

$$-1 \quad -1$$

$$2Q = -\frac{7}{3}$$

$$Q = -\frac{7}{6}$$

$$2Q+1 = \frac{4}{3}$$

$$-1 \quad -1$$

$$2Q = -\frac{2}{3}$$

$$Q = -\frac{1}{3}$$

(29)

$$4|3P-2| + 5 = 11$$

$$\frac{4|3P-2|}{4} = \frac{6}{4}$$

$$|3P-2| = 1.5$$

$$3P-2 = -1.5$$

$$+2 \quad +2$$

$$3P = 0.5$$

$$\frac{3P}{3} = \frac{0.5}{3}$$

$$P = 0.17$$

$$\text{OR } P = \frac{1}{6}$$

$$3P-2 = 1.5$$

$$+2 \quad +2$$

$$3P = 3.5$$

$$\frac{3P}{3} = \frac{3.5}{3}$$

$$P \approx 1.17 \text{ or}$$

$$P = 1\frac{1}{6}$$

Round to 2 decimals
Unless otherwise told

Chapter 6 Review - pg 418 - #'s 37-40

Section 6.7

CHECK SOLUTIONS FOR: $-3x + 2y \geq 16$

(37) $-3(\underset{x}{-2}) + 2(\underset{y}{8}) \geq 16$

CHECK POINT $(-2, 8)$
where $x = -2$, $y = 8$

$$6 + 16 \geq 16$$

$$22 \geq 16 \text{ (T)}$$

$(-2, 8)$ IS A SOLUTION

(38) $(-1, -1) \rightarrow -3(-1) + 2(-1) \geq 16$

$$3 - 2 \geq 16$$

$$1 \geq 16 \text{ (F)}$$

NOT A SOLUTION

(39) $(-2, 10) \rightarrow -3(-2) + 2(10) \geq 16$

$$6 + 20 \geq 16$$

$$26 \geq 16 \text{ (T)}$$

SOLUTION

(40) $(9, -5) \rightarrow -3(9) + 2(-5) \geq 16$

$$-27 - 10 \geq 16$$

$$-37 \geq 16 \text{ (F)}$$

NOT SOLUTION

NOTE: HERE YOU ARE CHECKING TO SEE IF A POINT IS A SOLUTION TO AN INEQUALITY. You would do the same for an equation

EXAMPLE: IS $(2, 4)$ A SOLUTION TO $x + y = 6$

$$2 + 4 = 6$$

$$6 = 6$$

SOLUTION