ACAD. ALG I

CHAPTER 6 REVIEW HW

Pg 415 #'s 5-29

(5) $x + 5 > -13$

$-5 \quad -5$

$x > -18$

(6) $m + 9 \geq -4$

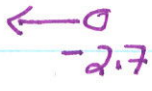
$+9 \quad +9$

$m \geq 5$

(7) $s + 3.7 < 1$

$-3.7 \quad -3.7$

$s < -2.7$



(8) $2 \cdot \frac{p}{2} \leq 5.2$

$p \leq 10$

* (9) $\frac{n}{-4.5} < -8 \cdot -4.5$

$n > 36$

* (10) $-3x > 27$

$-3 \quad -3$

$x < -9$

(11) $\frac{2y}{2} \geq \frac{18}{2}$

$y \geq 9$

* 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 $\geq$ 9.7 pts
FIND THE TOTAL POSSIBLE POINTS

VARIABLE x = TOTAL # of points

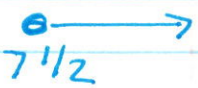
EQUATION $6\left(\frac{x}{6}\right) \geq (9.7)6$

SOLVE → $x \geq 58.2$

Answer in words → The athlete can score at most 58.2 points

(13) $2G + 11 < 25$
$-11 \quad -11$
$\frac{2G}{2} < \frac{14}{2}$
$G < 7$

(14) $\frac{2}{3}R - 4 \geq 1$
$+4 \quad +4$
$\left(\frac{3}{2}\right)\frac{2}{3}R \geq 5\left(\frac{3}{2}\right)$
mult by reciprocal
$R \geq \frac{15}{2}$
OR $R \geq 7.5$
OR $R \geq 7\frac{1}{2}$



(15) $1 - 3x \leq -14 + 2x$
$-2x \quad -2x$
$1 - 5x \leq -14$
$-1 \quad -1$
$-5x \leq -15$
$\frac{-5x}{-5} \leq \frac{-15}{-5}$
$x \geq 3$

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

$3Q+3 < 3Q+7$

$-3Q \quad -3Q$

$3 < 7$ T

X = ALL REAL NUMBERS

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

$8T-8 > 8T-8$

$-8T \quad -8T$

$-8 > -8$ F

NOTICE THE VARIABLE DROPPED OUT

X = NO SOLUTION

(18) $-3(2N-1) \geq 1-8N$

$-6N+3 \geq 1-8N$

$+8N \quad +8N$

$2N+3 \geq 1$

$-3 \quad -3$

$2N \geq -2$

$\frac{2N}{2} \geq \frac{-2}{2}$

$N \geq -1$

(19) KI: TICKETS – $7

ADD SHIPPING – $4

DONOT WANT TO SPEND MORE THAN $40

VARIABLE: X = # of tickets

EQUATION: $7X+4 \leq 40$

Solve →

$-4 \quad -4$

$7X \leq 36$

$\frac{7X}{7} \leq \frac{36}{7}$

$X \leq 5\ 1/7$

ANSWER IN words → You can order at most 5 movie tickets to spend less than $40

(20) $-6 < 2T - 5 \leq -3$

$+5 \quad +5 \quad +5$

$-1 < 2T \leq 2$

$\frac{}{2} \quad \frac{}{2} \quad \frac{}{2}$

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

(21) $-3 < -3x + 8 < 11$

$-8 \quad -8 \quad -8$

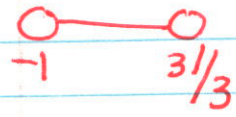
$-11 < -3x < 3$

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

$11/3 > x > -1$

rewrite to graph correctly

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



(22) $9s - 6 < 12$ OR $3s + 1 > 13$

$+6 \quad +6 \qquad -1 \quad -1$

$\frac{9s}{9} < \frac{18}{9} \qquad \frac{3s}{3} > \frac{12}{3}$

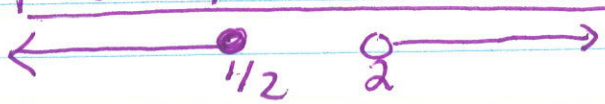
$s < 2$ OR $s > 4$

(23) $-4w + 12 \geq 10$ OR $5w - 14 > -4$

$-12 \quad -12 \qquad +14 \quad +14$

$\frac{-4w}{-4} \geq \frac{-2}{-4} \qquad \frac{5w}{5} > \frac{10}{5}$

$w \leq 1/2$ OR $w > 2$



(24) $|R| = 7$

$R = \pm 7$

C: $|7| = 7$

$7 = 7$ ✓

C: $|-7| = 7$

$7 = 7$ ✓

(25) $|A+6| = 2$

$A+6 = -2$ or $A+6 = 2$

$-6 \quad -6$ $\quad -6 \quad -6$

$A = -8$ $\quad A = -4$

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

$|-2| = 2$

$2 = 2$ ✓

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

$|2| = 2$

$2 = 2$ ✓

(26) $|2C+5| = 21$

$2C+5 = -21$ or $2C+5 = +21$

$-5 \quad -5$ $\quad -5 \quad -5$

$\frac{2C}{2} = \frac{-26}{2}$ $\quad \frac{2C}{2} = \frac{16}{2}$

$C = -13$ $\quad C = 8$

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

$|-21| = 21$

$21 = 21$ ✓

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

$21 = 21$ ✓

(27) $2|x-3|+1=5$

$-1 \quad -1$

$2|x-3|=4$

$\frac{2}{2} \quad \frac{4}{2}$

$|x-3|=2$

$x-3=-2$ OR $x-3=2$

$+3 \quad +3 \qquad +3 \quad +3$

$x=1$ $\qquad$ $x=5$

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

$2|-2|+1=5$ $\qquad$ $5=5$ ✓

$5=5$ ✓

(28) $3|2Q+1|-5=1$

$+5 \quad +5$

$3|2Q+1|=6$

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

$|2Q+1|=2$

$2Q+1=+2$ OR $2Q+1=-2$

$-1 \quad -1 \qquad -1 \quad -1$

$2Q=1$ $\qquad$ $2Q=-3$

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

$Q=\frac{1}{2}$ $\qquad$ $Q=-1\frac{1}{2}$

(29) $4|3P-2|+5=11$

$-5 \quad -5$

$4|3P-2|=6$

$\frac{4}{4} \quad \frac{6}{4}$

$|3P-2|=1.5$

Round to 2 decimals Unless otherwise told

$3P-2=-1.5$ OR $3P-2=1.5$

$+2 \quad +2 \qquad +2 \quad +2$

$3P=.5$ $\qquad$ $3P=3.5$

$\frac{3}{3} \quad \frac{.5}{3} \qquad \frac{3}{3} \quad \frac{3.5}{3}$

$P=.17$ OR $P=\frac{1}{6}$ $\qquad$ $P\approx 1.17$ OR $P=1\frac{1}{6}$

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 $x = -2$, $y = 8$

$6 + 16 \geq 16$

$22 \geq 16$ (T)

$(-2, 8)$ IS A SOLUTION

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

$3 - 2 \geq 16$

$1 \geq 16$ (F) NOT A SOLUTION

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

$6 + 20 \geq 16$

$26 \geq 16$ (T) SOLUTION

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

$-27 - 10 \geq 16$

$-37 \geq 16$ (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