$|3x| - 4 \leq 10$

$ +4 \quad +4$

$|3x| \leq 14$

flip, change sign

$3x \leq 14 \qquad\qquad 3x \geq -14$

$\dfrac{3x}{3} \leq \dfrac{14}{3} \qquad\qquad \dfrac{3x}{3} \geq \dfrac{-14}{3}$

$x \leq \dfrac{14}{3} \qquad\qquad x \geq \dfrac{-14}{3}$

$-\dfrac{14}{3} \qquad \dfrac{14}{3}$
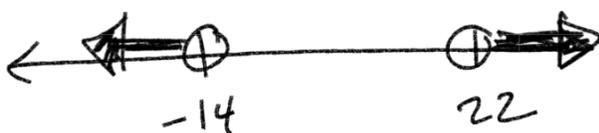
$-2|5x| \leq 10$

$\dfrac{}{-2} \qquad \dfrac{}{-2}$

$|5x| \geq -5$

all solutions!

All real numbers

1.) $|x-4| - 6 > 12$

$ +6 \quad +6$

$|x-4| > 18$

$x-4 > 18 \qquad\qquad x-4 < -18$

$+4 \quad +4 \qquad\qquad\quad +4 \quad +4$

$x > 22 \qquad\qquad\qquad x < -14$

$-14 \qquad\qquad 22$

2.) $|2x-8| - 2 > 20$

$ +2 \quad +2$

$|2x-8| > 22$

$2x-8 > 22 \qquad\qquad 2x-8 < -22$

$+8 \quad +8 \qquad\qquad\quad +8 \quad +8$

$\left\{ \dfrac{2x}{2} > \dfrac{30}{2} \qquad\qquad \dfrac{2x}{2} < \dfrac{-14}{2} \right\}$

$x > 15 \qquad\qquad\quad x < -7 \}$

$-7 \qquad\qquad 15$

1.) (5 pts each, 10 pts total) (3-1) Graph each of the following inequalities.

   a) $x \leq -4$

   (graph with solid dot, shaded to the left, labeled -4)

   b) $9 > y$

2.) (5 pts each, 15 pts total) (3-2) Solve each inequality. Graph and check the solution.

   a) $f + 12 < 5$
   $-12 \quad -12$

   $f < -7$ *(graph with open dot at -7, shaded to the left)*

   -7

   b) $-8 \leq t + 3$

   $20 \geq g$

   c) $7 \geq g - 13$
   $+13 \quad +13$ *(graph with open dot at 20, shaded to the left)*

   20

3.) (5 pts each, 20 pts total) (3-3) Solve each inequality. Graph and check the solution.

a) $\frac{8n}{8} > \frac{48}{8}$ $n > 6$

$$\longleftarrow \quad \overset{\oplus}{\underset{6}{\longrightarrow}} \quad \longrightarrow$$

b) $98 \geq -14d$

c) $\frac{y}{-3} < 15$ $^{-3}\left(\dfrac{y}{-3}\right) < (15)(-3)$

$y > -45$

$$\longleftarrow \quad \overset{\oplus}{\underset{-45}{\longrightarrow}} \quad \longrightarrow$$
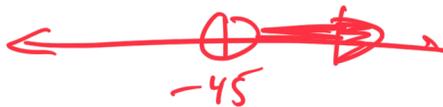
d) $-16 \leq \frac{b}{6}$

4.) (5 pts each, 20 pts total) (3-4) Solve each inequality. Graph and check the solution.

a) $13t - 8t > -45$

$$\frac{5t}{5} > \frac{-45}{5}$$

$t > -9$

-9

b) $2(5t - 25) + 5t \leq -80$

$10t - 50 + 5t \leq -80$

$t \leq -2$

$$15t - 50 \leq -80$$
$$+50 \quad +50$$

$$\frac{15t}{15} \leq \frac{-30}{15}$$

-2

c) $-4p + 28 < 8$

d) $3(4g - 6) \geq 6(g + 2)$

$$\boxed{12g} - 18 \geq 6g + 12$$
$$-6g \qquad -6g$$

$g \geq 5$

$$6g - 18 \geq 12$$
$$+18 \qquad +18$$

$$\frac{6g}{6} \geq \frac{30}{6}$$

5

3

5.) (5 pts each, 20 pts total) (3-5) Solve each inequality. Graph and check the solution.

a) -4d > 8 and 2d > -6

b) 7 + 2a > 9 or -4a > 8

$-7 \qquad -7 \quad \overline{-4} \ \overline{-4}$

$\dfrac{2a > 2}{2 \quad 2} \qquad a < -2$

$a > 1$

c) -1 < h - 2 ≤ 5

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

$1 < h \le 7$

$1 < h \qquad h \le 7$

d) t + 5 < 2 or 3t + 1 ≥ 10

6.) (5 pts each, 10 pts total) (3-6) Solve each inequality. Graph and check the solution.

a) $|j| - 2 \geq 6$

b) $5 > |v + 2| + 3$

7.) (5 pts each) (3-6) Solve the equation.

a) $|3c| - 45 = -18$

$+45 \quad +45$

$|3c| = \boxed{27}$

$\dfrac{3c}{3} = \dfrac{27}{3}$

$\boxed{c = 9}$

$\dfrac{3c}{3} = \dfrac{-27}{3}$

$\boxed{c = -9}$