TH-A1 Algebra 1 Week 18 2/1

$|3x| - 4 \le 10$

$+4 \quad +4$

① Isolate the absolute value

② Check: if negative
if negative → all solutions or no solution

$|3x| \le 14$

flip and change sign

③ split absolute value

$\frac{3x}{3} \le \frac{14}{3}$ $\qquad$ $\frac{3x}{3} \ge \frac{-14}{3}$

④ Solve each.

$x \le \frac{14}{3}$ $\qquad$ $\boxed{x \ge \frac{-14}{3}}$

⑤ Graph

$\frac{-2|5x|}{-2} \le \frac{10}{-2}$

① Isolate the absolute value

② Check: if negative
if negative → all solutions or no solution

$|5x| \ge -5$ negative

③ split absolute value

④ Solve each.

all solutions,
all real numbers

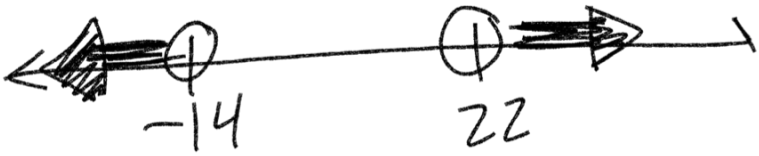
⑤ Graph

$$|x-4| - 6 > 12$$
$$+6 \qquad +6$$

$$|x-4| > 18$$

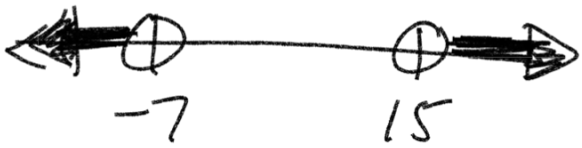
$$x-4 > 18 \qquad\qquad x-4 < -18$$
$$+4 \quad +4 \qquad\qquad +4 \quad +4$$

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



$$|2x-8| - 2 > 20$$
$$+2 \qquad +2$$

$$|2x-8| > 22$$



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

$$\frac{2x}{2} > \frac{30}{2} \quad x > 15 \qquad\qquad \frac{2x}{2} < \frac{-14}{2} \quad x < -7$$

Algebra 1 Chapter 3 Pre-Test

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

a) $x \leq -4$

b) $9 > y$

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

a) $f + 12 < 5$

$-12 \quad -12$

$f < -7$

b) $-8 \leq t + 3$

c) $7 \geq g - 13$

$+13 \quad +13$

$20 \geq g$

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

a) $8n > 48$

$\frac{}{8} \quad \frac{}{8}$

$n > 6$

b) $98 \geq -14d$

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

$y > -45$

c) $\frac{y}{-3} < 15$

d) $-16 \leq \frac{b}{6}$

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

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

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

$t > -9$

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

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

$15t - 50 \leq -80$

$+50 \quad +50$

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

$\boxed{t \leq -2}$

c) $-4p + 28 < 8$

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

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

$-6g \quad -6g$

$6g - 18 \geq 12$

$+18 \quad +18$

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

$\boxed{g \geq 5}$

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 $-4a > 8$

$-7 \quad -7 \qquad \frac{-4a}{-4} > \frac{8}{-4}$

$\frac{2a}{2} > \frac{2}{2} \qquad a < -2$

$a > 1$

c) $-1 < h - 2 \leq 5$

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

$1 < h \leq 7$

d) $t + 5 < 2$ or $3t + 1 \geq 10$

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

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

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

$-3 \qquad -3$

$2 > |v+2|$

$2 > v+2 \qquad -2 < v+2$

$-2 \qquad -2 \qquad -2$

$0 > v \qquad -4 < v$

same

you can rewrite

$|v+2| < 2$

$v+2 < 2 \qquad v+2 > -2$

$-2 \quad -2 \qquad -2 \quad -2$

$v < 0 \qquad v > -4$

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

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

$+45 \quad +45$

$|3c| = 27$

$\frac{3c}{3} = \frac{27}{3} \qquad \frac{3c}{3} = \frac{-27}{3}$

$\boxed{c = 9 \qquad c = -9}$