1.4 & 1.5 Quiz Review Name Key

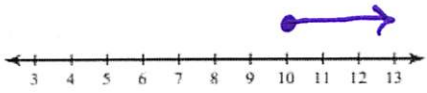
1. Solve each inequality and graph the answer on a number line.

a. $2x+4 \geq 24$

$-4 \quad -4$

$\frac{2x}{2} \geq \frac{20}{2}$

$x \geq 10$

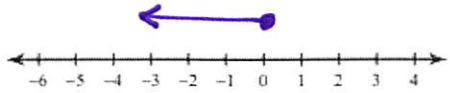


b. $-3(p-7) \geq 21$

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

$p-7 \leq -7$

$p \leq 0$

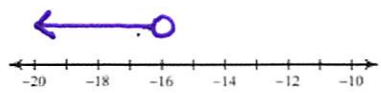


c. $-1 > \frac{12+x}{4}$

$-4 > 12 + x$

$-16 > x$

$x < -16$



2. Solve each equation for the indicated variable.

a. $u = \frac{ak}{b}$, for a

$ub = ak$

$a = \frac{ub}{k}$

b. $g = \frac{1+2a}{x}$, for x

$gx = 1 + 2a$

$g = \frac{1+2a}{x}$

c. $u = \frac{-2b-3}{ca}$, for c

$\frac{uca}{ua} = \frac{-2b-3}{ua}$

$c = \frac{-2b-3}{ua}$

3. Ryan is a wrestler trying to make weight. He currently weighs 200lbs. If he cuts 2 pounds per week, how many weeks will it take him to weigh less than 175 pounds. *Hint: Set up an inequality first.*

let x = # of weeks

$200 - 2x < 175$

$-200 \quad -200$

$\frac{-2x}{-2} < \frac{-25}{-2}$

$x < 12.5$

it will take him 13 weeks to weigh less than 175lbs

4. Solve each inequality, then state how many solutions each has.

a. $3(1-2x) > 3-6x$

$3 - 6x > 3 - 6x$

$+6x \quad +6x$

$3 > 3$

False!

∴ No solution

b. $-2(5+6x) < 6(8-2x)$

$-10 - 12x < 48 - 12x$

$+12x \quad +12x$

$-10 < 48$

True

∴ All real #'s

c. $-5n - 6n \leq 8 - 9n$

$-11n \leq 8 - 9n$

$+9n \quad +9n$

$\frac{-2n}{-2} \leq \frac{8}{-2}$

$n \geq -4$

5. Adrian works in New York City and makes $30 per hour. She works in an office and must get her suit dry cleaned everyday for $40. If she wants to make more than $370 a day, at least how many hours must she work?

Let x = # hrs

$30x + 40 > 370$

$-40 \quad -40$

$30x > 330$

$x > 11$

$\therefore$ She has to work for atleast 11 hrs

6. Write the equation for each inequality.

a.

$x \leq 1$

b.

$x > -2$

7. Ohm's law of electricity states that $V = IR$, where V is voltage, I the current, and R represents the resistance.

a. Use algebra to rewrite the equation to isolate I.

$\frac{V}{R} = \frac{IR}{R}$ $\qquad I = \frac{V}{R}$

b. If $V = 220$ volts and $R = 4$ ohms, what is the value of I.

$I = \frac{220}{4}$ $\qquad I = 55$ amperes

c. Rewrite the euqation in terms to isolate R.

$\frac{V}{I} = \frac{IR}{I}$ $\qquad R = \frac{V}{I}$

d. If $V = 550$ volts and $I = 1.5$ amperes, what is the value of R?

$R = \frac{550}{1.5}$ $\qquad R = 366.66$ ohms