

Name: _____
 Date: _____
 Class: _____

Algebra
 Unit 2
 HW 2-7

1) Would $x = 2$ make the following inequality true or false?

$$3x + 4 \leq 6 - 2x$$

$$3(2) + 4 \leq 6 - 2(2) \quad \rightarrow \quad 6 + 4 \leq 6 - 4$$

$$10 \leq 2 \quad \times \quad \boxed{\text{NO}}$$

2) Would $x = -5$ make the following inequality true or false?

$$\frac{4-2x}{3x} \geq \frac{6}{2x-3}$$

$$\frac{4-2(-5)}{3(-5)} \geq \frac{6}{2(-5)-3} \quad \rightarrow \quad \frac{4+10}{-15} \geq \frac{6}{-10-3}$$

$$\frac{14}{-15} \geq \frac{6}{-13} \quad \rightarrow \quad -.93 \geq -.46 \dots$$

$$\boxed{\text{NO}}$$

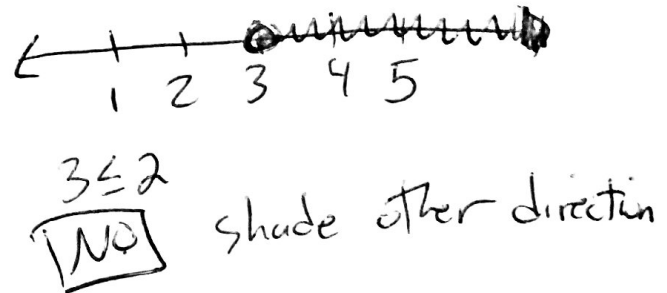
3) Solve and graph: $3x + 11 \leq 4 + 2(2 + 2x)$

$$3x + 11 \leq 4 + 4 + 4x$$

$$3x + 11 \leq 8 + 4x$$

$$\begin{array}{r} -3x - 8 \\ -8 - 3x \\ \hline 3 \leq x \end{array}$$

solid circle



4) Solve and graph: $\frac{3(2x+2)}{6} > \frac{1}{3}x + 2$

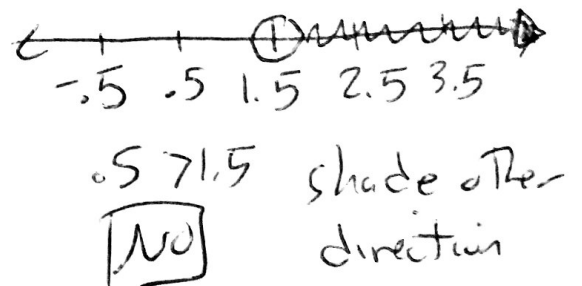
$$3(2x+2) > 2x + 12$$

$$6x + 6 > 2x + 12$$

$$\begin{array}{r} -2x - 6 \\ -2x - 6 \\ \hline 4x > 6 \end{array}$$

$$\frac{4x}{4} > \frac{6}{4} \quad x > 1.5$$

open circle



5) Solve for x ($a, b, c,$ and d are all positive number)

$$ax + b \geq cd$$

$$\begin{array}{r} -b -b \\ \hline ax \geq cd - b \end{array}$$

$$\frac{ax}{a} \geq \frac{cd - b}{a}$$

$$x \geq \frac{cd - b}{a}$$

6) Solve: $6 - 4x > 18$

$$\begin{array}{r} 6 \quad -6 \\ \hline \cancel{6} \quad \cancel{-6} \\ -4x > 12 \\ \hline -4 \quad -4 \end{array}$$

$$x < -3$$

* flip neg sign b/c
divide by neg #

- 7) Two siblings Edwin and Rhea are both going skiing but choose different payment plans. Edwin's plan charges \$45 for rentals and \$5.25 per lift up the mountain. Rhea's plan was a bundle where her entire day cost \$108.

* Set up and solve an inequality that will compare the two plans. When Edwin pays less

$x \rightarrow$ # times
on lift

$$E \rightarrow 45 + 5.25x$$

$$R \rightarrow 108$$

$$\begin{array}{r} 45 + 5.25x \leq 108 \\ -45 \quad \quad \quad -45 \\ \hline 5.25x \leq 63 \\ \hline 5.25 \quad 5.25 \end{array}$$

$$x \leq 12$$

If Edwin rides less than 12 times
he spends less