→ Skills tests 1 & 2 need to be passed by 3:00 pm today

→ Tests are graded – I'll show you your score when you've passed S.T. 1 & 2

→ Quarter grades: Wed. 10/29

Solving inequalities:

- An equation shows that two expressions are equal:

$$5 = 5$$
$$5 = 2 + 3$$
$$5x = 7$$
$$5x = 7(2x - 3)$$

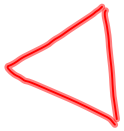
- An inequality shows how two expressions differ

$<$ — less than

$\leq$ — less than or equal to

$>$ — greater than

$\geq$ — greater than or equal



$5 \leq 7$

5 is less than or equal to 7

$2x > 4 + 3x$

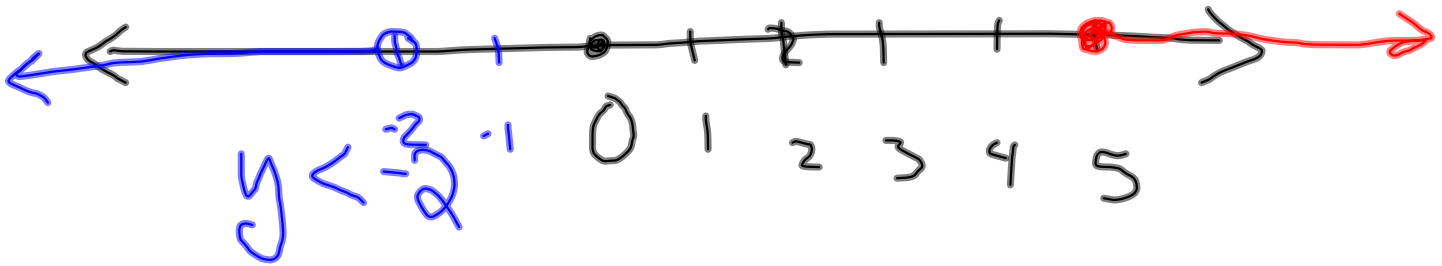
2 times x is greater than 4 plus 3 times x

$x \geq 5$

$x = 7$ ✓

$x = 2007$ ✓

$x = -2007$ ✗



$y < -\frac{3}{2}$

Solving inequalities:

Use the same rules as solving equations:

$$x + 5 < 4$$
$$-5 \quad -5$$
$$x < -1$$

$$x - 2 > 7$$
$$+2 \quad +2$$
$$x > 9$$

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

$$2 \cdot \frac{1}{2}x < 5 \cdot 2$$
$$x < 10$$

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

$$-2 \cdot -\frac{1}{2}x < 5 \cdot -2$$
$$x > -10$$

Why?

$-1(-x) > 2 \cdot -1$

$x < -2$

$x = 1$	✗
$x = 5$	✗
$x = -3$	✓

~~z < 7~~

8. $8n > -1$

$\frac{8n}{8} > \frac{-1}{8}$ $\quad n > -\frac{1}{8}$

9. $42 < 6z$

$\frac{42}{6} < \frac{6z}{6}$ $\quad 7 < z \quad z > 7$

10. $-5p \leq 2$

$\frac{-5p}{-5} \geq \frac{2}{-5}$ $\quad p \geq -\frac{2}{5}$

11. $\frac{w}{-4} < 8$ $\cdot -4$ $\quad w > -32$

21. Pavilion Rental You and three of your friends decide to rent a pavilion at a local park for an end-of-the-school-year party. The group budget is $80. The group decides to split the cost equally.

a. What are the possible amounts of money that each of you can spend?

1 $14 $24
2 $?? $2?
3 $1? $2?
4 $1? $2?

$\frac{80}{4} = 20$

$\leq \$20$ each!

b. If two more of your friends decide to pitch in for the party, what are the possible amounts of money that each of you can spend if you all split the cost equally?

inequality

m = amount you spend per person

$\frac{80}{6} \geq \frac{6m}{6}$

$m \leq \frac{80}{6}$

$m \leq \frac{40}{13.333}$

Homework

p. 359 5-25 (every 5th), 32, 38

p. 366 5-30 (every 5th), 39, 44-52 (even)