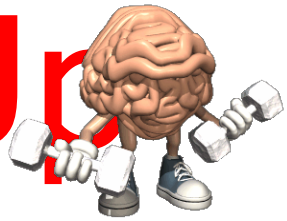
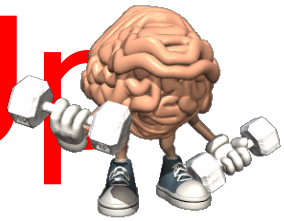
Warm-Up



1) $\frac{3}{2}(1 + 3r) = \frac{2}{3}(2 - 3r)$

2) $13u - 6 + 5u = 12 + 16u - 8$

Warm-Up



1) $\frac{3}{2}(1 + 3r) = \frac{2}{3}(2 - 3r)$

$\frac{3}{2} + \frac{9r}{2} = \frac{4}{3} - \frac{6r}{3}$ (6) (6) (6)

$9 + 27r = 8 - 12r$ +12r +12r

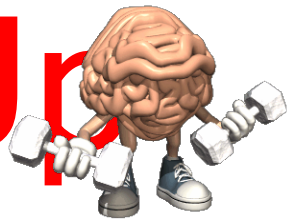
$-9 \quad -9$

$9 + 39r = 8$

$\frac{39r}{39} = \frac{-1}{39}$

$r = \frac{-1}{39}$

Warm-Up



2) $13u - 6 + 5u = 12 + 16u - 8$

$18u - 6 = 4 + 16u$ (−16u, −16u)

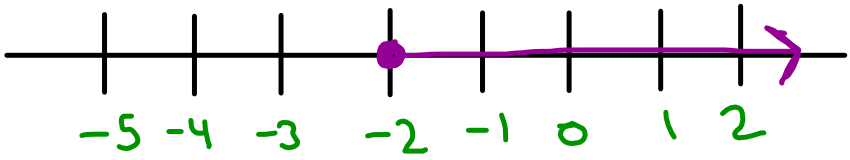
$2u - 6 = 4$ (+6, +6)

$\frac{2u}{2} = \frac{10}{2}$

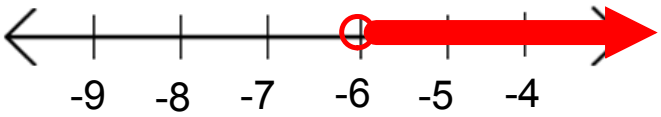
$u = 5$

Graph the following

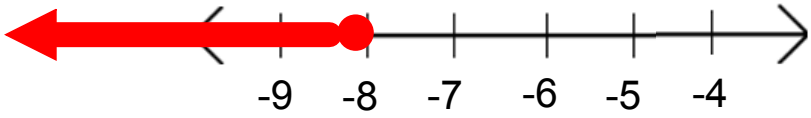
$-2 \leq t$ $t \geq -2$



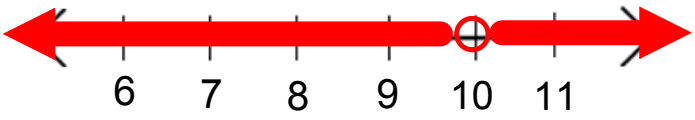
Write the inequality that represents the graphs



$x > -6$



$x \leq -8$



Part C: Word Problem

In order to obtain full value on any question you must show all required work.

1) You need to rent a car for your upcoming sporting event. $C = 220 + 0.25K$

Company A charges an flat fee of $220.00, plus $0.25 for ever kilometer driven

Company B charges a flat fee of $100, plus $0.85 for every kilometer driven. $C = 100 + 0.85K$

Write the equations that can be used to determine the number of kilometers for which the two companies will charge the same.

Equation: $220 + 0.25K = 100 + 0.85K$

b) Solve the equations :

$-0.25K \qquad -0.25K$

$220 + 0.25K = 100 + 0.85K$

$-100 \qquad -100$

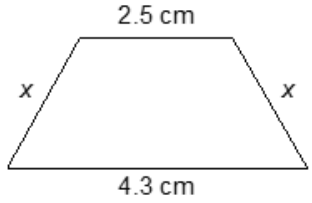
$220 = 100 + 0.6K$

$\frac{120}{0.6} = \frac{0.6K}{0.6}$

$200 = K$

2) The trapezoid below has side lengths 2.5 cm and 4.3 cm, and perimeter 13.6 cm.

a) Write an equation that can be used to determine the lengths of the remaining sides.



Equation: $P = s + s + s + s$

$13.6 = 2.5 + 4.3 + x + x$

$13.6 = 6.8 + 2x$

b) Solve the equation.

$-6.8 \quad -6.8$

$13.6 = 6.8 + 2x$

$\frac{6.8}{2} = \frac{2x}{2}$

$3.4 = x$

Any Questions ?????

Last Nights Homework

Page 292-293

Questions: 3(aceg), 4, 7(ac)

8,9, 11a,12,13(aceg)

Equations

$x + 6 = 10$ (-6)

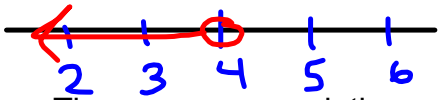
$x = 4$

There is only one solution

Inequality

$x + 6 < 10$ (-6)

$x < 4$



There are many solutions.

i) Solve the inequality

ii) Verify

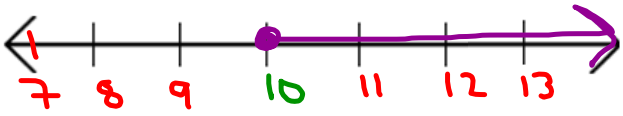
iii)Graph on a number line

Hint: Easier if you always solve for a positive variable

$6 \leq x - 4$ (+4, +4)

$10 \leq x$

$x \geq 10$



Verify

$x \geq 10$

$x = 11$

LH RH

$6 \leq 11 - 4$

7

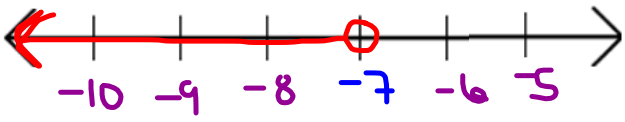
Yes

Try These!

2. $5 > m + 12$ (−12 from both sides)

$-7 > m$

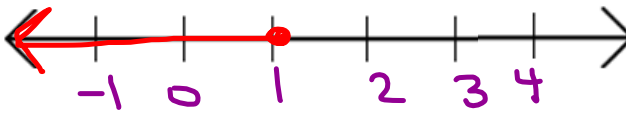
$m < -7$



Remember:
Always move the smaller variable

3. $-2y \leq -3y + 1$ (+3y from both sides)

$y \leq 1$



Remember:

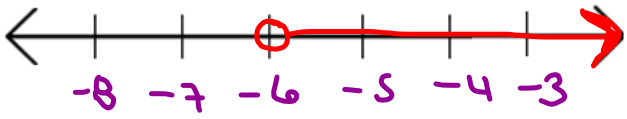
Always move the smaller variable

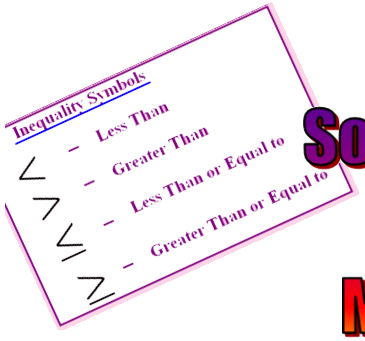
4. $-4y + 7 > -5y + 1$

$+5y \quad +5y$

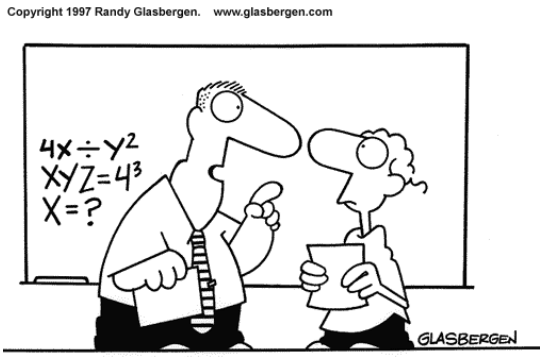
$y + 7 > 1$ $\quad -7 \quad -7$

$y > -6$





Section 6.5
Solving Linear Inequalities by Using Multiplication & Division



"Algebra class will be important to you later in life because there's going to be a test a few days from now."

Let's Have A Look ....

Place a > or < sign that makes the statement true.

$5x \square -7x$

$\frac{5x}{-1} \square \frac{-7x}{-1}$

$-3x = 6$

$\frac{-3x}{-3} = \frac{6}{-3}$

$x = -2$

$-5x < 7x$

Let's Have A Look ....

Place a > or < sign that makes the statement true.

$-6 \boxed{>} -18$

$-6 \quad -6$

$1 < 3$

Now lets divide each side by (-6)

What do you notice???

Properties of Inequalities

1) When you multiply or divide a inequality by a positive number the inequality remains the same.

Example) $5 > -1$

$5(3) > (-1)(3)$

$15 > -3$

2) When you multiply or divide a inequality by a "negative number" the inequality must be reversed(switched) in order to remain true.

$12 > -10$

$12 \div (-2) \quad -10 \div (-2)$

Switch inequality since divided by a negative

$12 \div (-2) < -10 \div (-2)$

FIX

$-6 < 5$

NOTE:

When solving an inequality, we use the same strategy as for solving an equat

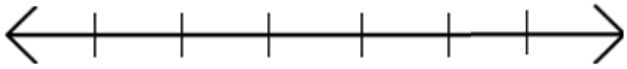
BUT

Remember when we divide or multiply by a negative number, we reverse the inequality sign.

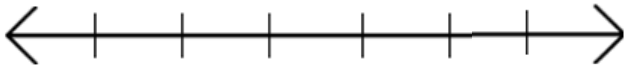
Switch the inequality sign ONLY when you divide or multiple by a negative

Graph the following and give 3 examples of solutions

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



$$\frac{x}{2} + 3 \leq \frac{2x - 4}{3}$$



-

Classwork / Homework:

p. 298

4
#6
#7
#9
#12
13