Curriculum Outcome

PR1: . Generalize a pattern arising from a problem-solving context using linear equations and verify by substitution.

PR3. Model and solve problems using linear equations of the form:

***ax* = *b;* = b , a ≠ 0; *ax* + *b* = *c*; +*b* = *c*, a ≠ 0; = *b*, *x* ≠ 0 ax ax xa**

ax*+ *b* = *cx* + *d*; *a*(*bx* + *c*) = *d*(*ex* + *f*); *a*(*x* + *b*) = *c*; *ax* = b+*cx

concretely, pictorially and symbolically, where*a, b, c, d, e, and f* are rational numbers

Student Friendly: Solving an inequality that has a negative variable (ie. <, >)

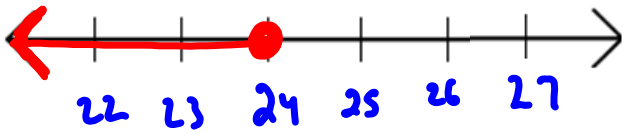
Warm Up

1. $11 \geq x - 13$

$+13 \quad +13$

$24 \geq x$

$x \leq 24$



2. $5y - 8 < -2y + 6$

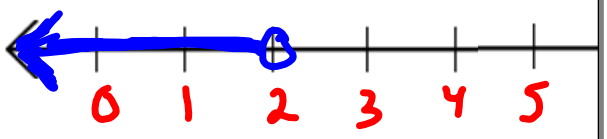
$+2y \quad +2y$

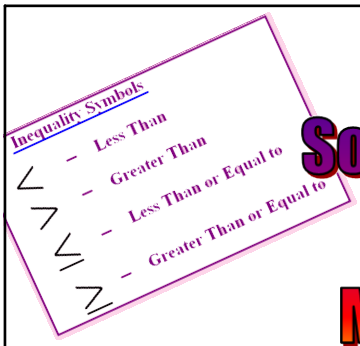
$7y - 8 < 6$

$+8 \quad +8$

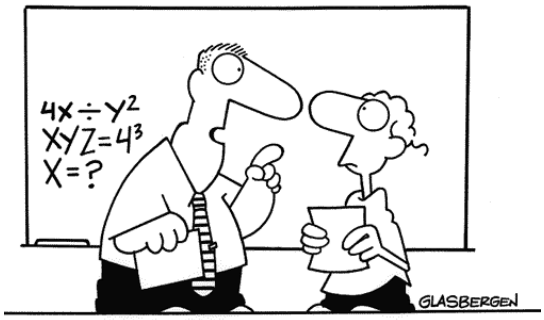
$\frac{7y}{7} < \frac{14}{7}$

$y < 2$





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.

5 $\boxed{>}$ -7

$(5)^{\times(-1)}$ $(-7)^{\times(-1)}$

$-5 < 7$

Now lets multiply each side by (-1)

What do you notice???

Let's Have A Look ....

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

-6 $\boxed{>}$ -18

$\frac{(-6)}{-6}$ $\frac{(-18)}{-6}$

Now lets divide each side by (-6)

What do you notice???

1 < 3

Properties of Inequalities

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

Example)

$$5 > -1$$
$$5(3) > (-1)(3)$$
$$15 > -3$$

Properties of Inequalities

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

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

$-6 < 5$

FIX

NOTE:

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

Study

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

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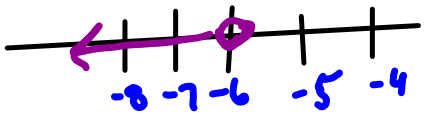
Solving a Multi-Step Inequality

What if you solve for a negative "variable"

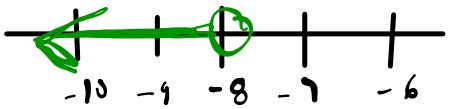
1) $\frac{-2n}{(-2)} > \frac{12}{(-2)}$

$n < -6$



2) $\frac{n}{(-4)} > 2$ $\times(-4)$ $\times(-4)$

$n < -8$



Solving a Multi-Step Inequality

What if you solve for a negative "variable"

$-6n \quad -6n$

2) $\boxed{-2n} - 5 > \boxed{6n} + 7$

$\boxed{-8n} - 5 \overset{+5}{>} 7 \overset{+5}{}$

$\frac{-8n}{-8} > \frac{12}{-8}$

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

$+2n \quad +2n$

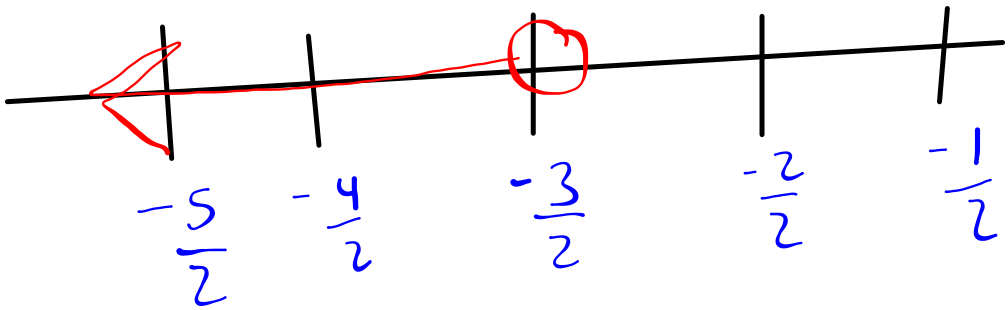
2) $\boxed{-2n} - 5 > \boxed{6n} + 7$

$-5 \overset{-7}{>} \boxed{8n} + 7 \overset{-7}{}$

$\frac{-12}{8} > \frac{8n}{8}$

$\frac{-3}{2} > n$

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



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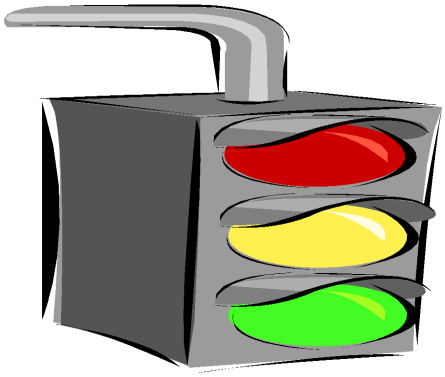

Now it is time for Home Learning

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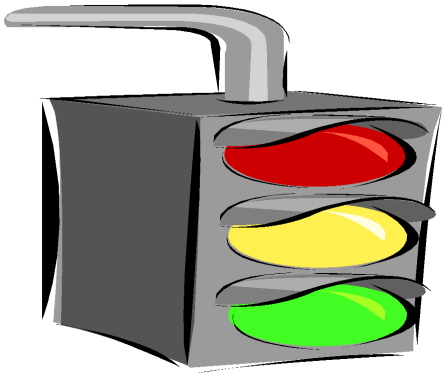

Class/Homework

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