

BE-1A MONDAY 4-21-08

SOLVE AND GRAPH THE SOLUTION ON A NUMBER LINE.

① $2x - 6 \leq -9$

② $\frac{3}{5}x + 4 > 3$

③ Solve #1 and #2 above AFTER REPLACING
the INEQUALITY symbol with AN EQUALS sign.

★ If you missed Quiz 3 - you must
arrange time to make it up - this (arrangement)
should have been done already!!

** Forget = 0%

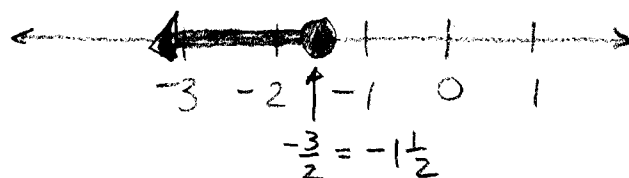
*** Same for graded homework from last week.

BE SOLUTION:

$$\textcircled{1} \quad \begin{array}{rcl} 2x - 6 & \leq & -9 \\ +6 & +6 & \end{array}$$

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

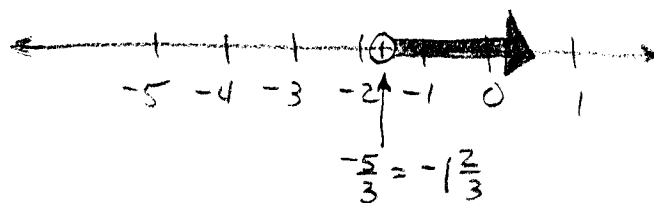
$$\boxed{x \leq -\frac{3}{2}}$$



$$\textcircled{2} \quad \begin{array}{rcl} \frac{3}{5}x + 4 & > & 3 \\ -4 & -4 & \end{array}$$

$$\frac{5}{3} \cdot \frac{3}{5}x > -1 \cdot \frac{5}{3}$$

$$\boxed{x > -\frac{5}{3}}$$



$$\textcircled{3} \quad \begin{array}{rcl} 2x - 6 & = & -9 \\ +6 & +6 & \end{array}$$

$$\frac{2x}{2} = \frac{-3}{2}$$

$$\boxed{x = -\frac{3}{2}}$$

$$\textcircled{4} \quad \begin{array}{rcl} \frac{3}{5}x + 4 & = & 3 \\ -4 & -4 & \end{array}$$

$$\frac{5}{3} \cdot \frac{3}{5}x = -1 \cdot \frac{5}{3}$$

$$\boxed{x = -\frac{5}{3}}$$

How do you check the solution to an inequality? (EX) $2x - 6 \leq -9$

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

Unlike an equation, which has only 1 check, an inequality will have 3 checks!

Since 2 of the checks have infinite choices, you must pick your own numbers - here is how.

$2x - 6 \leq -9$ IS $x \leq -\frac{3}{2}$ the solution

Any $x < -\frac{3}{2}$
 must be true
 Pick easy number
 Say x is -3

$$2(-3) - 6 \stackrel{?}{\leq} -9$$

$$-6 - 6 \stackrel{?}{\leq} -9$$

$$-12 \leq -9 \checkmark$$

If $x = -\frac{3}{2}$,
 must be true
 No choice here,

$$2(-\frac{3}{2}) - 6 \stackrel{?}{\leq} -9$$

$$-\frac{6}{2} - 6 \stackrel{?}{\leq} -9$$

$$-3 - 6 \stackrel{?}{\leq} -9$$

$$-9 \leq -9 \checkmark$$

If $x > -\frac{3}{2}$,
 must be false,
 Pick easy number
 Say x is 0

$$2(0) - 6 \stackrel{?}{\leq} -9$$

$$-6 \stackrel{?}{\leq} -9 \text{ FALSE}$$

WHAT X VALUES would you use for

$$\frac{3}{5}X + 4 > 3$$

$$\boxed{X > -\frac{5}{3}} ?$$

$$\underline{\underline{CK}} \quad X > -\frac{5}{3} \text{ TRUE}$$

$$\text{use } X = 0$$

$$\frac{3}{5}(0) + 4 > 3$$

$$4 > 3 \checkmark$$

$$\underline{\underline{CK}} \quad X = -\frac{5}{3} \text{ FALSE}$$

$$\frac{3}{5}\left(-\frac{5}{3}\right) + 4 > 3$$

$$-1 + 4 > 3$$

$$3 > 3$$

$$\text{FALSE} \checkmark$$

$$\underline{\underline{CK}} \quad X < -\frac{5}{3} \text{ FALSE}$$

$$\text{use } X = -5$$

$$\frac{3}{5}(-5) + 4 > 3$$

$$-3 + 4 > 3$$

$$1 > 3$$

$$\text{FALSE} \checkmark$$

ⓔX Solve and check solution

$$t - 45 \geq 13$$

$$+45 \quad +45$$

$$\boxed{t \geq 58}$$

$$\underline{\underline{CK}} \quad t > 58 \text{ TRUE}$$

$$\text{we } t = 60$$

$$(60) - 45 \geq 13$$

$$15 \geq 13 \checkmark$$

$$\underline{\underline{CK}} \quad t = 58 \text{ TRUE}$$

$$(58) - 45 \geq 13$$

$$13 \geq 13 \checkmark$$

$$\underline{\underline{CK}} \quad t < 58$$

$$\text{we } t = 0$$

$$0 - 45 \geq 13$$

$$\text{FALSE} \checkmark$$

ⓔX Pg 318

Book used 60, 58, 50

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EXAMPLES

What checks would you do for the following solutions to inequalities?

$$x > 6$$

$$x \leq -2$$

$$x > 0$$

Homework

Page 330 # 39 to 42

*Note: Each problem has 4 parts!

- ① DEFINE A VARIABLE.
- ② WRITE AN INEQUALITY.
- ③ SOLVE THE INEQUALITY.
- ④ CHECK THE SOLUTION.

(homework example - next page)

Example homework problem - yours should look like this.

#43
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25% of a number is ≥ 90

$$\begin{array}{r} \cdot 25 N \geq 90 \\ \hline \cdot 25 \qquad \frac{1}{4} \end{array}$$

$$N \geq 90 \cdot \frac{4}{1}$$

$N \geq 360$

CK $N < 360$
FALSE

$$\begin{array}{l} \cdot 25(100) \stackrel{?}{\geq} 90 \\ 25 \stackrel{?}{\geq} 90 \\ \text{FALSE} \checkmark \end{array}$$

CK $N = 360$
TRUE

$$\begin{array}{l} \cdot 25(360) \stackrel{?}{\geq} 90 \\ 90 \stackrel{?}{\geq} 90 \checkmark \\ \text{TRUE} \end{array}$$

CK $N > 360$
TRUE

$$\begin{array}{l} \cdot 25(400) \stackrel{?}{\geq} 90 \\ 100 \stackrel{?}{\geq} 90 \checkmark \\ \text{TRUE} \end{array}$$