

$$\textcircled{13} \quad \begin{array}{r} \cancel{4x} - 1 > 6x + 2 \\ -6x \quad -2x \end{array}$$

$$\begin{array}{r} -1 > 4x \quad \cancel{+2} \\ -2 \quad \quad \quad \cancel{-2} \end{array} \rightarrow x < -\frac{3}{4}$$

$$\frac{-3}{4} > \frac{4x}{4}$$

$$-\frac{3}{4} > x$$



CHAPTER 6 SECTION 2B

Solving Inequalities- variable on both sides

Inequality symbols

- Used to compare 2 non-equal values

- Symbol

- $<$

- $>$

- \leq

- \geq

- Read as

- **“ is less than”**

- **“ is greater than”**

- **“ is less than or equal to”**

- **“ is greater than or equal to”**

Solving Inequalities

□ Steps for solving:

- ▣ Get the variable on the same side of the inequality sign
- ▣ Perform opposite operation to solve for the variable
- ▣ If you multiply or divide by a negative number, you must **FLIP** the inequality sign
- ▣ Graph the solution on a number line

Examples:

□ 1. $4x + 2 > 2x - 8$

$-3x$ $-2x$

$x + 2 > -8$

-2 -2

$x > -10$



□ 2. $2x - 1 < 3 - x$

$+x$ $+x$

$3x - 1 < 3$

$+1$ $+1$

$\frac{3x}{3} < \frac{4}{3}$

$x < \frac{4}{3}$

$x < 1\frac{1}{3}$



Examples:

□ 3. $-2x + 2 \leq 8x - 4$

$+7x$ $+2x$

$$2 \leq 10x - 4$$

$+4$ $+4$

$$\frac{6}{10} \leq \frac{10x}{10}$$

$$\frac{3}{5} \leq x$$

$$x \geq \frac{3}{5}$$

~~Answer~~

$\frac{3}{5}$

□ 4. $-3x - 3 \geq -9x + 4$

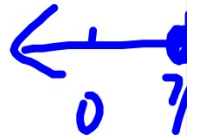
$+9x$ $+9x$

$$6x - 3 \geq 4$$

$+3$ $+3$

$$6x \geq \frac{7}{6}$$

$$x \geq \frac{7}{6}$$



Examples

□ 5. $3x - 4 < 2x + 7$

$-2x$ $-2x$

$x - 4 < 7$
 $+4$ $+4$

$x < 11$



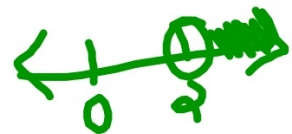
□ 6. $4x - 1 > -x + 9$

$+x$ $+x$

$5x - 1 > 9$
 $+1$ $+1$

$5x > 10$
 $\frac{5x}{5} > \frac{10}{5}$

$x > 2$



Class Work

□ Pg 343 # 30-35

Homework

□ Pg 343 # 15-29