7.6 (Page 270) Solving Multi-Step Inequalities

When solving inequalities that have multiple steps to them, work the problem out as if you had an equation.

Then, have the inequality sign at the end of the problem. Be sure to have the variable first in the answer.

7.6 (Page 270) Solving Multi-Step Inequalities

REMINDER: When you multiply or divide both sides of the inequality by a negative number,

REVERSE THE INEQUALITY SIGN!!!!

7.6 (Page 270) Solving Multi-Step Inequalities

Example: Solve each inequality.

$$2a - 5 > 17$$
$$+5 \quad +5$$
$$\frac{2a}{2} > \frac{22}{2}$$
$$a > 11$$

7.6 (Page 270) Solving Multi-Step Inequalities

Example: Solve each inequality.

$$7g - 3 \leq 46$$
$$+3 \quad +3$$
$$\frac{7g}{7} \leq \frac{49}{7}$$
$$g \leq 7$$

7.6 (Page 270) Solving Multi-Step Inequalities

Example: Solve each inequality.

$$\frac{z}{-3} - 4 > 27$$

$$+4 \quad +4$$

$$-3 \cdot \frac{z}{-3} < 31 \cdot -3$$

$$z < -93$$

7.6 (Page 270) Solving Multi-Step Inequalities

Example: Solve each inequality.

$$32 + 7t > 4$$

$$-32 \quad -32$$

$$\frac{7t}{7} > \frac{-28}{7}$$

$$t > -4$$

7.6 (Page 270) Solving Multi-Step Inequalities

Example: Solve each inequality.

$$-12 + 11y < 54$$
$$+12 \qquad +12$$
$$\frac{11y}{11} < \frac{66}{11}$$
$$\boxed{y < 6}$$

7.6 (Page 270) Solving Multi-Step Inequalities

Example: Solve each inequality.

$$-18 \geq 3(k + 5)$$
$$-18 \geq 3k + 15$$
$$-15 \qquad -15$$
$$\frac{-33}{3} \geq \frac{3k}{3}$$
$$-11 \geq k$$
$$\boxed{k \leq -11}$$

7.6 (Page 270) Solving Multi-Step Inequalities

Example: Solve each inequality.

$-3(m - 2) > 12$

$-3m + 6 > 12$

$-6 \quad -6$

$\frac{-3m}{-3} > \frac{6}{-3}$

$m < -2$

7.6 (Page 270) Solving Multi-Step Inequalities

Example: Solve each inequality.

$3x + 5 > 7x + 4$

$-3x \quad -3x$

$5 > 4x + 4$

$-4 \quad -4$

$\frac{1}{4} > \frac{4x}{4}$

$\frac{1}{4} > x$

$x < \frac{1}{4}$