

Writing Inequalities from a Story Problem

Steps:

- 1) Must define the variable; Let $n =$ _____.
- 2) Write the inequality sentence; make sure to identify key words that determine the inequality symbol.
- 3) Solve the inequality.
- 4) Write a statement that answers the question.

Write an inequality that represents the situation, then solve.

1) The quotient of a number and -5 is greater than the quotient of 11 and 15.

$n =$ the number

$$-5 \cdot \frac{n}{-5} > \frac{11}{15} \cdot -5$$

$$-\frac{1}{5}n$$

$$n < -\frac{11}{3} \text{ or } -3\frac{2}{3}$$

Write an inequality that represents the situation, then solve.

2) 8 less than 2 times a number is at most 36.

$n =$ the number

$$\begin{array}{r} 2n - 8 \leq 36 \\ + 8 \qquad + 8 \end{array}$$

$$2n \leq 44$$

$$n \leq 22$$

3) Jimmy is going bowling and has \$25 to spend. Write and solve an inequality to find the maximum number of games he can bowl if each game costs \$3.75 and he buys a \$2 snack.

$$g = \# \text{ of games}$$

$$3.75g + 2 \leq 25$$
$$\quad - 2 \quad \quad - 2$$

$$3.75g \leq 23$$

$$g \leq 6.\overline{13}$$

Jimmy can only afford to play 6 games.

4) Heather makes \$240 plus \$15 for each charm bracelet she sells. Write and solve an inequality to find how many bracelets she must sell to earn at least \$600.

b = # of bracelets sold

$$\begin{array}{r} 240 + 15b \geq 600 \\ - 240 \qquad \qquad - 240 \end{array}$$

$$15b \geq 360$$

$$b \geq 24$$

Heather would have to sell 24 or more bracelets to earn at least \$600.