



# LESSON 4.2

## SOLVE INEQUALITY WORD PROBLEMS

**Goal:** To solve equations/inequalities in math and real world context and to write rules for arithmetic sequence.

**Obj:** SWBAT write/solve equations in word problems.

## INEQUALITIES KEY WORDS

**At least** – means greater than or equal to  $\geq$

**More than** – means greater than  $>$

**No more than** – means less than or equal to  $\leq$

**At most** – means less than or equal to  $\leq$

**Less than** – means less than  $<$

## PROBLEM 1: more than >

Jake and Mark volunteer at an animal shelter. Mark worked 5 more hours than Jake. They each worked a whole number of hours. Together they worked more than 29 hours. What is the least number of hours each worked?

$$\begin{array}{r} \text{Jake} + \text{Mark} \\ J + J + 5 \\ \hline \end{array} \quad \begin{array}{r} \text{Totals} \\ \text{hrs} \\ > 29 \end{array}$$

$$\begin{array}{r} 2J + 5 > 29 \\ - 5 \\ \hline \end{array}$$

Jake: 12 hr

Mark: 17 hr

$$\begin{array}{r} 2J > 24 \\ \hline 2 \\ J > 12 \end{array}$$

**PROBLEM 2:** the most  $\leq$   $.04 = \underbrace{.04}_{\%}$

Amanda is ordering books online. She has \$100 to spend. The seller charges 4% of the cost of the books for shipping. What is the most that Amanda's books can cost, before the shipping charge?

$$\begin{array}{r} \text{cost} \\ \text{of} \\ \text{Books} \\ 1B \end{array} + \text{Shipping } 4\% \cdot \$ \leq 100$$

$$B + .04B \leq 100$$

$$\frac{\cancel{1.04}B}{1.04} \leq \frac{100}{1.04}$$

$$B \leq 96.15$$

The most  
She spend  
on Books is  
\$96.15

### PROBLEM 3:

YellowCab Taxi charges a \$1.75 flat rate in addition to \$0.65 per mile. Katie has no more than \$10 to spend on the ride. Write an inequality that represents Katie's Situation. How many miles can Katie travel without exceeding her limit?

$$\begin{array}{rcl}
 \text{flat} & + & \text{per} \\
 \text{rate} & & \text{mile} \\
 1.75 & + & .65m \leq 10 \\
 -1.75 & & \underline{-1.75}
 \end{array}$$

At most  
She can travel  
12.69 miles

$$\frac{.65m}{.65} \leq \frac{8.25}{.65}$$

$$m \leq 12.69$$



### **PROBLEM 5:**

Your elementary school is having a fall carnival. Admission into the carnival is \$3 and each game inside the carnival costs \$.25. Write an inequality that represents the possible number of games that can be played having \$10. What is the maximum number of games that can be played?

**PROBLEM 6:**

Chris wants to order DVD's over the internet. Each DVD costs \$15.99 and shipping for the entire order is \$9.99. Chris has no more than \$100 to spend. How many DVD's can Chris buy? Write and solve an inequality that represents Chris' situation.



## **PROBLEM 7:**

Skate Land charges a \$50 flat fee for birthday party rental and \$5.50 for each person. Joann has no more than \$100 to spend on the birthday party. What is the maximum amount of people that Joann can invite? Write and solve an inequality to represent the situation.