

INEQUALITY APPLICATION WORDS

LESS THAN ($<$)

- FEWER THAN
- BELOW
- IS SMALLER THAN

GREATER THAN ($>$)

- MORE THAN
- EXCEEDING
- ABOVE
- LARGER THAN

LESS THAN OR EQUAL TO (\leq)

- NO MORE THAN
- NOT ABOVE
- DOES NOT EXCEED
- AT MOST
- IS NOT GREATER THAN
- *MAXIMUM*

GREATER THAN OR EQUAL TO (\geq)

- AT LEAST
- NO FEWER THAN
- NOT SMALLER THAN
- IS NOT LESS THAN
- NOT UNDER
- NO LESS THAN
- *MINIMUM*

EXAMPLE #1

Albert earns \$3.50 for each hour he works. If he wants to earn at least \$52.50, how many hours must he work?

$$3.50x \geq 52.50$$

x - hours

$$\frac{3.50x}{3.50} \geq \frac{52.50}{3.50}$$

$$x \geq 15$$

more than
15 hours

Ex #2:

The daily production cost for a skate factory cannot be more than \$5400. It costs \$15 in materials to make each pair of skates, and the daily operating costs are \$900. How many pairs of skates can be produced given these restrictions?

$$\begin{array}{r} 15x + 900 \leq 5400 \\ -900 \quad -900 \\ \hline 15x \leq 4500 \\ \frac{15x}{15} \leq \frac{4500}{15} \quad x \leq 300 \\ \text{pairs of skates} \end{array}$$

x - Skates

EX #3

Kevin's history grade will be determined by the average of 4 tests. He earned a 76, an 85, and a 74 on the first 3 tests. He needs to get an average of at least 80 to receive a B. What is the minimum grade he can make on the 4th test to achieve his goal?

COMPOUND INEQUALITY

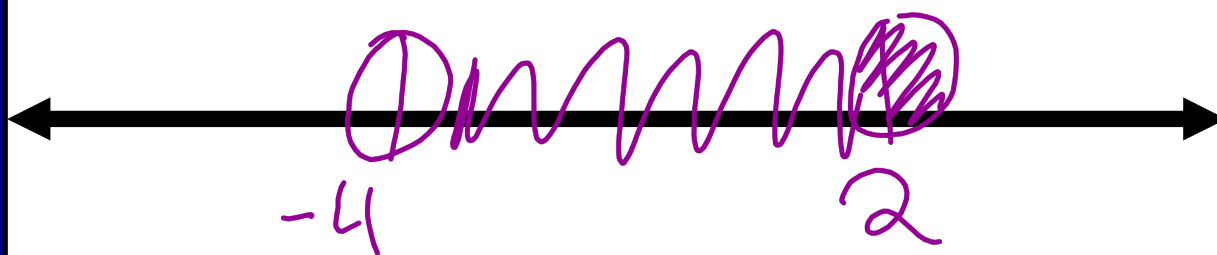
TWO SIDED INEQUALITIES THAT YOU
MUST KEEP BALANCED!

**IF YOU DIVIDE/MULTIPLY BY
A NEGATIVE YOU MUST FLIP
BOTH INEQUALITY SIGNS!!!**

EXAMPLE #4

GRAPH THE SOLUTION

$$-4 < X \leq 2$$



EXAMPLE #5

SOLVE AND GRAPH THE SOLUTION

$$-4 < -2x + 8 \leq 2$$

$$\begin{array}{ccc} -8 & & -8 \end{array}$$

$$\frac{-12}{-2} < \frac{-2x}{-2} \leq \frac{-6}{-2}$$

$$6 > x \geq 3$$

