# Cereal Food Drive!

# Winning Class will be rewarded!

Write in words what each inequality says.

a. $x > 5$

X is greater than 5

Solutions:

6, 7, 8

b. $x \leq -2$

X is less than or equal to -2

Solutions:

-21, -50, -69

c. $3 > x$

$X < 3$

X is less than 3

Solutions:

2, 1, -1, 0

d. $-1 \leq x$

$X \geq -1$

x is greater than or equal to -1

Solutions:

1,000,000

0, -1

**Compound Inequality:** *Two or more inequalities that are connected by the words* and *or* or .

**Intersection of Inequalities:** *A compound inequality that contains the word* and .

**This type of compound inequality is true if **both** inequalities are true.

Ex: $x > 6$ **and** $x < 9$ can be combined together and written as → $6 < X < 9$, $X > 6$ and $X < 9$

Ex: The ages of the students in this class are greater than 12 but less than 16.

→ $X > 12$ and $X < 16$ $12 < X < 16$

**Union of Inequalities:** *A compound inequality that contains the word* OR.

**This type of compound inequality is true if **at least one** of the inequalities is true.

Ex: $x > 2$ **or** $x \leq -1$ cannot be combined together into one inequality.

Ex: The low/high temperature each day in November was either less than 40 degrees or greater than 65 degrees. ⟶ $X < 40$ or $X > 65$

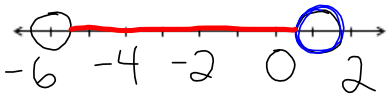
Examples:

Rewrite each compound inequality as two separate inequalities. Then graph on the number line provided. Write 3 solutions for each inequality.

a. $-6 < x < 1$

$-6 < x$ $\quad x < 1$

$x > -6$



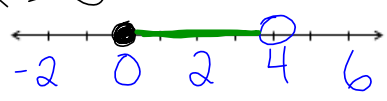

Solutions:

$-3, -2, 0$

b. $0 \leq x < 4$

$0 \leq x$

$x \geq 0$ $\quad x < 4$

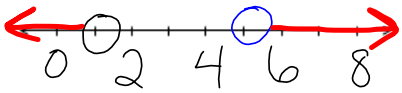



Solutions:

$0, 1, 2, 3$

Graph each compound inequality. Write 3 solutions for each inequality.

c. $x < 1$ or $x > 5$




Solutions:

0, 3million, 2billion

d. $x \leq -2$ or $x \geq 3$



Solutions:

Graph each compound inequality. Write 3 solutions for each inequality.

e. $-2 < x \leq 4$



Solutions:

f. $x < -2$ or $x > 4$



Solutions: