# Day 3_ Graphing Inequalities

Write the appropriate vocabulary word in the correct box.

| Above at most no greater than | More than Greater than minimum | at least below maximum | less than no more than fewer than |
|---|---|---|---|
| > | ≥ | < | ≤ |
|  |  |  |  |

# Model_ "Let's Take Notes!

| Symbol | Meaning | Graph |
|---|---|---|
| > |  |  |
| ≥ |  |  |
| < |  |  |
| ≤ |  |  |

# Practice Makes Perfect!

Examples: Let's Graph each inequality on the number line.

1) X < 5

   a) Will it be an open or closed circled circle?

   _____

   b) List three values that satisfy this inequality.

   _____, _____, and _____

   c) Graph the inequality on the number line.

   ←——————————————————————————→

2) X ≥ 5

   a) Will it be an open or closed circled circle?

   _____

   b) List three values that satisfy this inequality.

   _____, _____, and _____

   c) Graph the inequality on the number line.

   ←——————————————————————————→

3) X ≤ -6

   a) Will it be an open or closed circled circle?

   _____
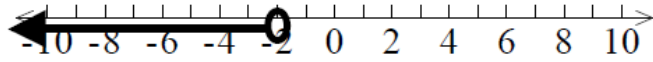
   b) List three values that satisfy this inequality.

   _____, _____, and _____

   c) Graph the inequality on the number line.

   ←——————————————————————————→

4) Joseph was asked to graph the inequality x > -2. Look over Joseph's graph below and determine if he is correct or not. Justify your answer.

$$\xleftarrow{\hspace{3cm}} \begin{array}{ccccccccccc} \bullet \\ -10 & -8 & -6 & -4 & -2 & 0 & 2 & 4 & 6 & 8 & 10 \end{array} \longrightarrow$$

_____

_____

## Model   Let's Graph Inequalities on a Number Line!

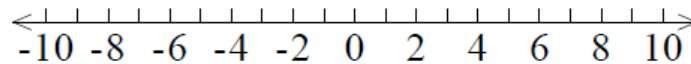Graph the solution set on the real number line.

a)       x > -3        $\longleftarrow\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!\longrightarrow$

b)       $x \le -5$     $\longleftarrow\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!\longrightarrow$

c)       $x \ge 4$      $\longleftarrow\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!\longrightarrow$

d)       $x < 7$       $\longleftarrow\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!\longrightarrow$

e)       $x > 12$      $\longleftarrow\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!\longrightarrow$

f)    X $\ne$ 3        $\longleftarrow\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!\longrightarrow$

g)       $2 > x$       $\longleftarrow\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!+\!\!\!\longrightarrow$

Directions:    Graph the following inequalities.

1. $f > 7$

    -10 -8 -6 -4 -2 0 2 4 6 8 10

2. $m < 4$

    -10 -8 -6 -4 -2 0 2 4 6 8 10

3. $a \geq -1$

    -10 -8 -6 -4 -2 0 2 4 6 8 10

4. $z \leq 5$

    -10 -8 -6 -4 -2 0 2 4 6 8 10

5. $6 \geq p$

    -10 -8 -6 -4 -2 0 2 4 6 8 10
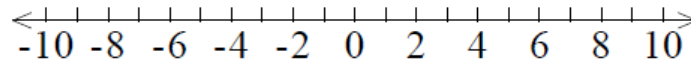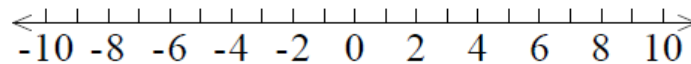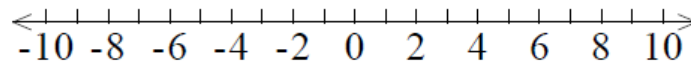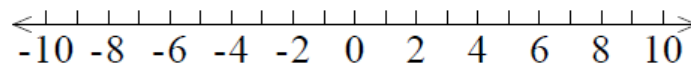
| Model_Write the appropriate inequality for each example below: | |
| --- | --- |
| **Graph** | **Inequality** |

| Graph | Inequality |
| --- | --- |
|  closed circle at 6, arrow left | |
|  open circle at -4, arrow right | |
|  open circle at -2, arrow left | |
|  closed circle at 0, arrow right | |
|  open circle at 9, arrow left | |
|  closed circle at -7, arrow right | |