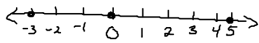


2.5 Graphing Inequalities

Number line



Graph -3, 0, 5

We cannot list all answers to $x > 2$

$$x > 2$$

$$\{ 3, 4, \dots, 10, \dots, 15, \dots \}$$

** Focus on the numbers needed when creating the number line.

closed circle: $\leq, \geq, =$

open circle: $<, >, \neq$

direction: Use a test point

Interval Notation -

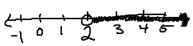
open circles are shown using: (or)

closed circles are shown using: $[\text{ or }]$

arrows are shown using: ∞
(infinity)

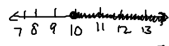
Ex: Graph and give the answer in interval notation.

1. $x > 2$



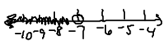
Test pt: 4 $(2, \infty)$
 $x > 2$
 $4 > 2$
 True

2. $a \geq 10$



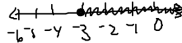
Test pt: 7 $[10, \infty)$
 $a \geq 10$
 $7 \geq 10$
 False

3. $b < -7$



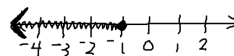
Test pt: -9 $(-\infty, -7)$
 $b < -7$
 $-9 < -7$
 True

4. $-3 \leq x$



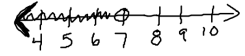
Test Pt 0 $[-3, \infty)$
 $-3 \leq x$
 $-3 \leq 0$
 True

5. $-1 \geq y$



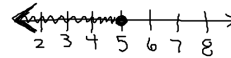
Test: -2 $(-\infty, -1]$
 $-1 \geq y$
 $-1 \geq -2$
 true

6. $m < 7$



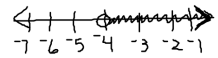
test: 5 $(-\infty, 7)$
 $m < 7$
 $5 < 7$
 true

7. $x \leq 5$



test: 6 $(-\infty, 5]$
 $x \leq 5$
 $6 \leq 5$
 false

8. $-4 < n$



test: -5 $(-4, \infty)$
 $-4 < n$
 $-4 < -5$
 false

HOMEWORK

Worksheet HW 2.5

Graphing Inequalities