

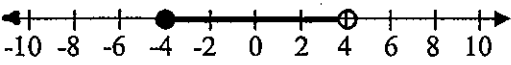
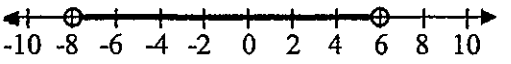
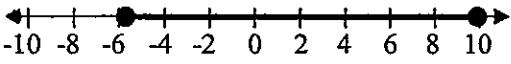
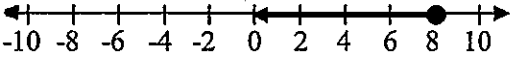
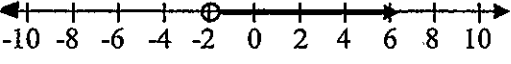
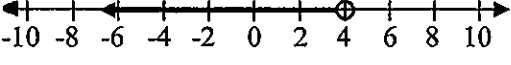
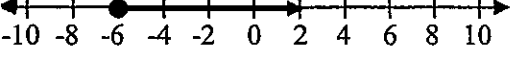
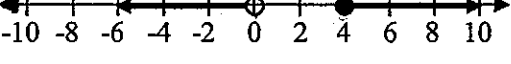
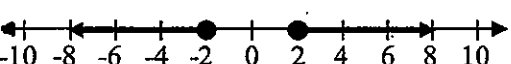
Name: Key

Date: _____

Interval Notation and Infinite Sets Algebra 1 Homework

Skills

1. Represent each interval graphed below with both set builder and interval notation.

Graphed Interval	Set Builder Notation	Interval Notation
	$\{x \in \mathbb{R} \mid -4 \leq x < 4\}$	$[-4, 4)$
	$\{x \in \mathbb{R} \mid -8 < x < 6\}$	$(-8, 6)$
	$\{x \in \mathbb{R} \mid -6 \leq x \leq 10\}$	$[-6, 10]$
	$\{x \in \mathbb{R} \mid x \leq 8\}$	$(-\infty, 8]$
	$\{x \in \mathbb{R} \mid x > -2\}$	$(-2, \infty)$
	$\{x \in \mathbb{R} \mid x < 4\}$	$(-\infty, 4)$
	$\{x \in \mathbb{R} \mid x \geq -6\}$	$[-6, \infty)$
	$\{x \in \mathbb{R} \mid x < 0 \text{ or } x \geq 4\}$	$(-\infty, 0) \cup [4, \infty)$
	$\{x \in \mathbb{R} \mid x \leq -2 \text{ or } x \geq 2\}$	$(-\infty, -2] \cup [2, \infty)$

2. The set of all real numbers less than or equal to 5 could be expressed as

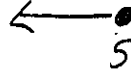
(1) $(5, \infty)$

(3) $(-\infty, 5)$

$x \leq 5$

(2) $[5, \infty)$

(4) $(-\infty, 5]$



4

3. The set $\{x: -10 \leq x < 8\}$ can be written in interval notation as

(1) $[-10, 8)$

(3) $(-10, 8)$

(2) $[-10, 8]$

(4) $(-10, 8]$

1

4. The set of all positive real numbers can be expressed as which of the following?

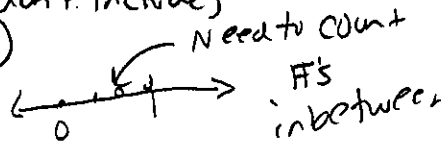
(1) $[1, \infty)$

(3) $(0, \infty)$

0 is NOT positive (don't include)

(2) $[0, \infty)$

(4) $(-\infty, 0]$



3

5. Which of the following represents a closed interval?

(1) $[-5, 4]$

(3) $(-3, 7)$

inclusive

(2) $[7, 12)$

(4) $(-6, 2]$

1

6. Which of the following intervals represents all numbers between 5 and 10

(1) $[5, 10]$

(3) $(5, 10)$

exclusive?

(2) $(5, 10)$

(4) $[5, 10)$

NOT including

2

7. The solution set to the inequality $35 - 4x < 11$ can be written as

(1) $(-\infty, 6)$

(3) $(6, \infty)$

$\frac{-35 \quad -35}{-4 \quad -4}$

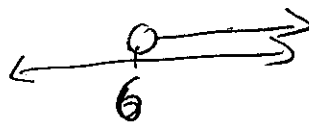
(2) $[6, \infty)$

(4) $(-\infty, 6]$

$\frac{-4x < -24}{-4 \quad -4}$

$x > 6$

switch the direction of the inequality symbol when dividing by a neg. #



3