Name:_____

Teacher:_____

Score:

_Date: _____

The Domain and range of a function

- I. Given the following in set-builder notation, express the answer in interval notation.
- 1. {*x* : *x* > −5}
- 2. { $x : -5 < x \le 7$ }
- 3. x is all reals
- 4. $\{x : x \le 4, x \ge 6\}$

II. Given the following in interval notation, express the answer in set-builder notation. 5. $(-\infty, 4]$

- 6. $(-\infty, -3] \cup (4, \infty)$
- 7. [2,6)
- 8. (**5**,**8**)
- III. For each graph:
 - (a) Describe the domain and range using set builder notation
 - (b) Describe the domain and range using interval notation.
 - (c) Determine if the graph is a function.

9.





Interval Notation:

11.



Set Builder notation:

Interval Notation:



Set Builder notation:

Interval Notation:

12.

10.



Set Builder notation:

Interval Notation:



Solutions

1- $(-5, +\infty)$						
2- (-5, 7]						
$3 - (-\infty, +\infty)$						
4- (−∞, 4] \cup [6 , ∞)						
5- $\{x : x \le 4\}$						
6- { $x : x \leq -3, x > 4$ }						
7- $\{x : 2 \le x \le 6\}$						
8- { $x : 5 < x \le 8$ }						
9-	(a)	$D = \{x : x \in \mathbb{R}\}$	(b)	$D = (-\infty, +\infty)$	(c)	Yes
		$R = \{y : y \le 4\}$		$R = (-\infty, 4]$		
10-	(a)	$D = \{x : x \le 4\}$	(b)	$D = (-\infty, 4)$	(c)	Yes
		$R = \{y : -3 < y \le 3\}$		R = (-3, 3]		
11-	(a)	$D = \{x : -6 \le x \le -2, x \ge 1\}$	(b)	D = (-6, -2] ∪ [1, +∞)	(c)	Yes
		$R = \{y : -2 < y \le 3\}$		R = (-2, 3]		
12-	(a)	$D = \{x : x \ge -5\}$	(b)	$D = [-5, +\infty)$	(c)	No
		$R = \{y : y > -5\}$		$\mathbf{R} = (-5, +\infty)$		

