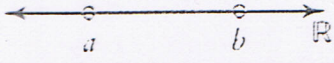
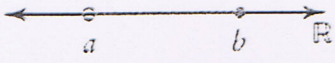
Interval Notation: Sets of real numbers may be described in a variety of ways:

as an inequality:	in interval (or bracket) notation:	graphically on a number line:
$3 < x \leq 5$	$(3, 5]$	

Below is a summary of all possible intervals for real numbers a and b, where $a < b$.

Bracket Interval	Inequality	Number Line	In Words
			The set of all real numbers x such that
(a, b)	$a < x < b$		x is greater than a and less than b
$(a, b]$	$a < x \leq b$		x is greater than a and less than or equal to b
$[a, b)$	$a \leq x < b$		x is greater than or equal to a and less than b
$[a, b]$	$a \leq x \leq b$		
	$x \geq a$		x is greater than or equal to a
			x is less than or equal to a
(a, ∞)			
	$x < a$		
			

Example #2: Write each function in the appropriate row of the second column of the given table. Give reasons for your answers.

$y = -x^3$ $\quad y = .3x^2$ $\quad y = 5x$ $\quad y = 4x^5$

$y = -x^6$ $\quad y = -0.1x^{11}$ $\quad y = 2x^4$ $\quad y = -9x^{10}$

End Behaviour	Function	Reasons
Extends from quadrant 3 to quadrant 1		
Extends from quadrant 2 to quadrant 4	$y = -x^3$	
Extends from quadrant 2 to quadrant 1	$y = .3x^2$	
Extends from quadrant 3 to quadrant 4		