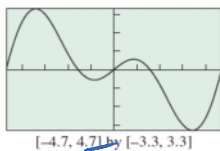


# Notes Key

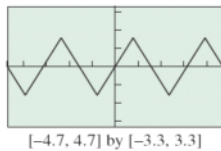
Tuesday, August 25, 2015  
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Precalc Section 1.2A: Functions and their Properties Name: \_\_\_\_\_

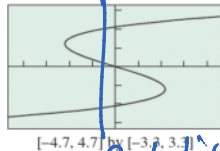
**PART 2:** After learning the definition of a function, determine which graphs below are functions and which are not. Be able to explain. If the relation described by a graph is NOT a function, explain why or why not. *Is there an easy way to test a graph of a relation to determine if it is a function?*



Func.



Func.



Relation

**PART 3**

Examine the tables below, each of which describes a relation between y and x. In which of these tables is y a function of x? If the relation described by a table is **not** a function, explain why not.

a) 

x	1	2	3	4	5	6	7	8	9
y	3	5	7	9	11	13	15	17	19

yes

b) 

x	1	2	3	4	5	6	7	8	9
y	3	3	7	9	11	13	13	17	19

yes

c) 

x	1	2	3	4	5	4	3	2	1
y	3	5	7	9	11	9	7	5	3

yes

d) 

x	9	4	1	0	1	4	9	16	25
y	-3	-2	-1	0	1	2	3	4	3

no

**PART 4:** Examine the equations below. Circle those which are functions. If they are NOT a function, give an example of why not.

$y^2 = 4$   
 $y = \pm 2$

no  $y^2 = x$

$y - 14 = 5x + 1$  yes

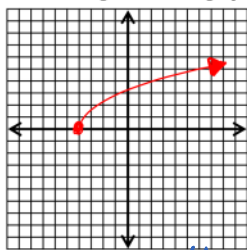
no  $|y| = x + 7$

$x^2 - y = 7$  yes  $y = x^2 - 7$

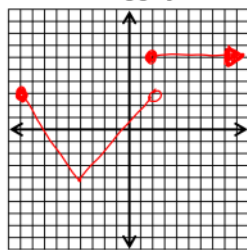
no  $x^2 + y^2 = 9$

$y = x \pm 3$  no

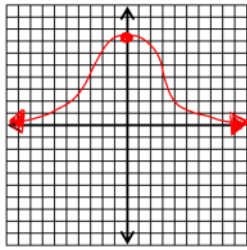
**PART 5:** Finding the domain graphically. State the domain of the following graphs in interval notation.



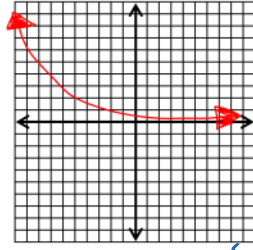
Domain  $x \geq -4$   
 $[-4, \infty)$



Domain  $x \geq -9$   
 $[-9, \infty)$

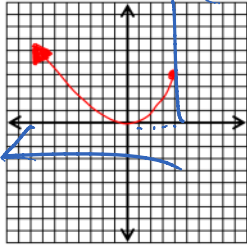


Domain  $(-\infty, \infty)$

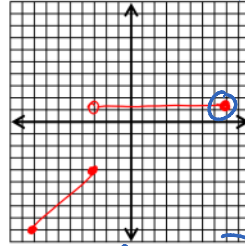


???

Domain  $(-\infty, \infty)$



Domain  $x \leq 4$   
 $(-\infty, 4]$



Domain  $[-8, 8]$

**PART 6**

Finding the domain algebraically.

1)  $f(x) = \frac{x+3}{x^2+5x+4}$   
 $\uparrow$   
 $\neq 0$

$x^2 + 5x + 4 = 0$

$(x+4)(x+1) = 0$

$x = -4 \quad x = -1$

D:  $(-\infty, -4) \cup (-4, -1) \cup (-1, \infty)$

D: All Real #'s

$x \neq -1, -4$

2)  $f(x) = \sqrt{9-x}$

$9-x \geq 0$

$x \leq 9$

$(-\infty, 9]$

3)  $f(x) = \frac{x-11}{(x-11)(\sqrt{x+2})}$

$(x-11)(\sqrt{x+2}) = 0$

$(-2, 11) \cup (11, \infty)$

$x-11=0$

$x+2 > 0$

$x \neq 11$

$x > -2$

