5 pts each

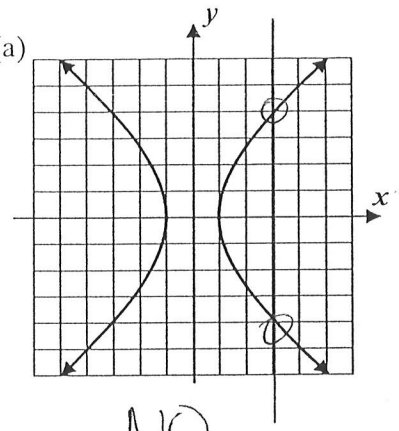
Name: Key Date: _____

Introduction to Functions
Algebra 2 with Trigonometry - Homework

Skills

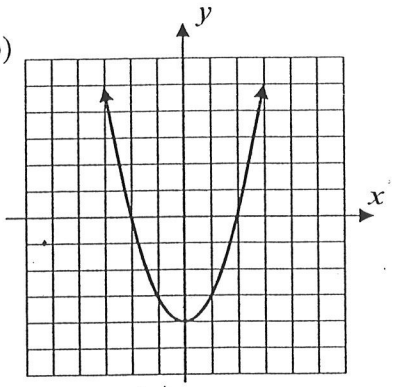
1. Determine for each of the following graphed relationships whether y is a function of x using the Vertical Line Test.

(a)



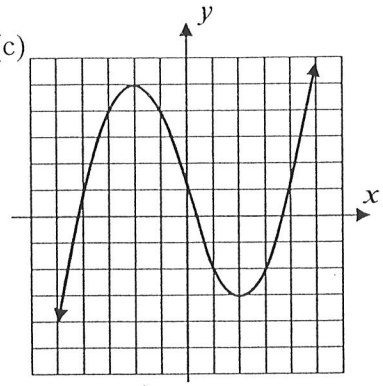
NO

(b)



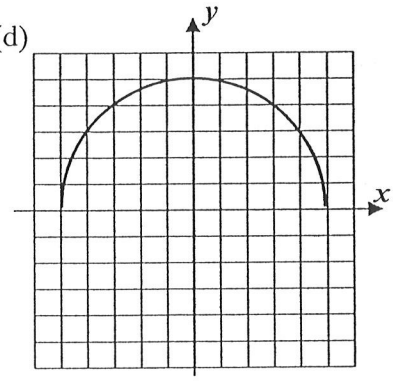
yes

(c)



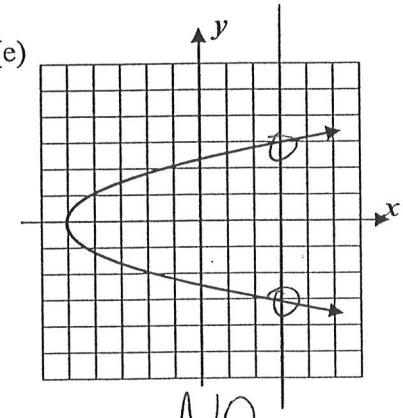
yes.

(d)



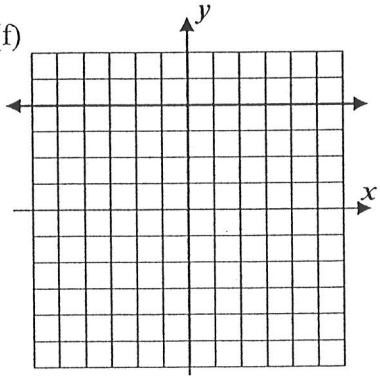
yes.

(e)



NO

(f)



yes

2. What are the outputs for an input of $x = 5$ given functions defined by the following formulas:

(a) $y = 3x - 4$

$y = 3(5) - 4$

$y = 11$

(b) $y = 50 - 2x^2$

$y = 50 - 2(5)^2$

$y = 0$

(c) $y = 2^x$

$y = 2^5$

$y = 32$

APPLICATIONS

3. Evin is walking home from the museum. She starts 38 blocks from home and walks 2 blocks each minute. Evin's distance from home is a function of the number of minutes she has been walking.

   (a) Which variable is independent and which variable is dependent in this scenario?

   t = time in min (independent)

   D = distance from home (dependent).

   (b) Fill in the table below for a variety of time values.

Time, t, in minutes	0	1	5	10
Distance from home, D, in blocks	38	36	28	18

   (c) Determine an equation relating the distance, D, that Evin is from home as a function of the number of minute, t, that she has been walking.

   $D = 38 - 2t$

   (d) Determine the number of minutes, t, that it takes for Evin to reach home.

   $0 = 38 - 2t$

   $-38 = -2t$

   $19 = t$

   19 min

REASONING

4. In one of the following tables, the variable y is a function of the variable x. Explain which relationship is a function and why the other is not.

Relationship #2 is not a function b/c $X = 1$ has two outputs and $X = 4$ has two outputs.

x	y
-2	11
0	7
2	11
4	23
6	43

Relationship #1

Yes

x	y
0	0
1	-1
1	1
4	-2
4	2

Relationship #2

NO