Name: _____

Define and Represent a Function

Exercise 1: Determine whether each relation is a function. Explain your answer.

1)

x	y
−2	4
0	3
5	2
2	4

2)

x	y
−1	2
0	7
1	4
1	−2
4	5
6	−4

Exercise 2: Evaluate each of the following functions for the given value of x.

1. $f(x) = -3x + 4$ for $x = -2$
2. $f(x) = x^3 - 3$ for $x = 9$
3. $f(x) = -x - 11$ for $x = 0$
4. $f(x) = x - 10$ for $x = 2$
5. $f(x) = 2x^3 + 13$ for $x = 1$
6. $f(x) = x^5$ for $x = 5$
7. $f(x) = x - 2$ for $x = 17$
8. $f(x) = \frac{5}{2}x - \frac{1}{3}$ for $x = \frac{1}{4}$
9. $f(x) = x^3$ for $x = 9$
10. $f(x) = \frac{4}{5}x - \frac{1}{5}$ for $x = \frac{1}{2}$

Exercise 3: Determine which of the following equations functions are and which are not.

1) $f(x) = 6x + 9$

2) $f(x) = 7x - 8$

3) $f(x) = -3x^4 - 8$

4) $f(x) = -2x^2 + 1$

5) $f(x) = 9x^5 + 3x^4 + 1$

6) $f(x) = 4x^4 - 2x^3 + 5x + 4$

7) $f(x) = \frac{1}{2}x^3 + 8$

8) $f(x) = x^2 + 3$

9) $f(x) = 4x^6 + x^4 + 2x + 7$

10) $f(x) = x^5 + 4x^3 + x + 12$

11) $f(x) = \sqrt{25x + 16}$

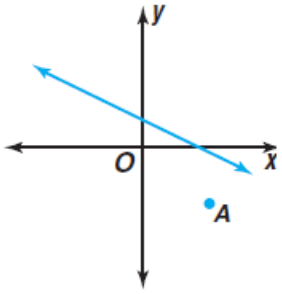
12) $f(x) = \sqrt{x + 9}$

13) $f(x) = \sqrt{x + 1}$

14) $f(x) = \sqrt{\frac{1}{9}x + 16}$

Exercise 4: Use the vertical line test to determine whether each relation is a function.

1)



2)