1. Graph the function represented by the table below. Is the function *linear* or *nonlinear*?

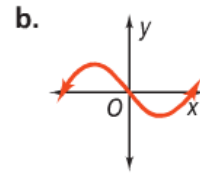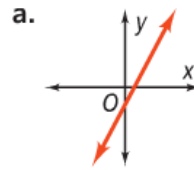| x	0	1	2	3	4
y	12	13	14	15	16

2. The ordered pairs $(0, -2)$, $(1, 1)$, $(2, 4)$, $(3, 7)$, and $(4, 10)$ represent a function. What is a rule that represents this function?

3. Which rule could represent the function shown by the table below?

x	0	1	2	3	4
y	0	−1	−4	−9	−16

A. $y = x^2$ **B.** $y = -x^3$ **C.** $y = -x^2$

4. Vocabulary Does the graph represent a *linear function* or a *nonlinear function*? Explain.

a.

b.

5. Error Analysis A classmate says that the function shown by the table at the right can be represented by the rule $y = x + 1$. Describe and correct your classmate's error.

x	y
0	1
1	2
2	5
3	10
4	17

The cost C, in dollars, for pencils is a function of the number n of pencils purchased. The length L of a pencil, in inches, is a function of the time t, in seconds, it has been sharpened. Graph the function shown by each table below. Tell whether the function is *linear* or *nonlinear*.

6.

Pencil Cost					
Number of Pencils, n	6	12	18	24	30
Cost, C	$1	$2	$3	$4	$5

Graph the function shown by each table. Tell whether the function is *linear* or *nonlinear*.

8.

x	y
0	5
1	5
2	5
3	5

10.

x	y
0	0
1	1
2	−5
3	8
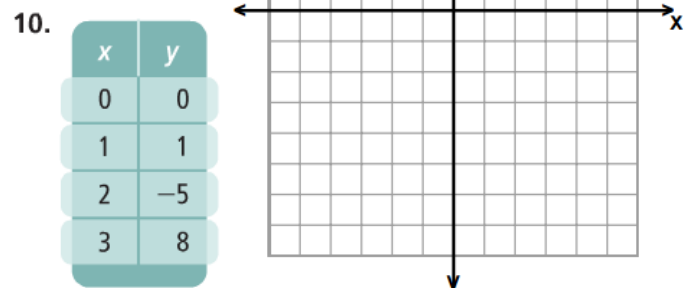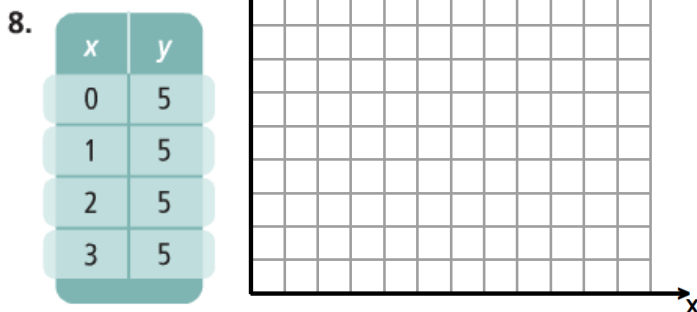
Each set of ordered pairs represents a function. Write a rule that represents the function.

13. $(0, 0)$, $(1, 4)$, $(2, 16)$, $(3, 36)$, $(4, 64)$

17. Writing The rule $V = \frac{4}{3}\pi r^3$ gives the volume V of a sphere as a function of its radius r. Identify the independent and dependent variables in this relationship. Explain your reasoning.

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Evaluate each expression for $x = -3$, $x = 0$, and $x = 2.5$.		
27. $7x - 3$	**28.** $1 + 4x$	**29.** $-2x^2$
$x = -3$	$x = -3$	$x = -3$
$x = 0$	$x = 0$	$x = 0$
$x = 2.5$	$x = 2.5$	$x = 2.5$