Practice 9

Definition of Functions
Functions and their Graph
Function Notation

Determine whether the equation defines y as a function of x.

1) $x + y = 36$ 1) _____
A) y is a function of x B) y is not a function of x

2) $7x + 5y = 5$ 2) _____
A) y is a function of x B) y is not a function of x

3) $x + y^2 = 4$ 3) _____
A) y is a function of x B) y is not a function of x

4) $x^2 + y^2 = 81$ 4) _____
A) y is a function of x B) y is not a function of x

5) $y^2 = 5x$ 5) _____
A) y is a function of x B) y is not a function of x

6) $y = -\sqrt{x + 6}$ 6) _____
A) y is a function of x B) y is not a function of x

7) $x + y^3 = 64$ 7) _____
A) y is a function of x B) y is not a function of x

Evaluate the function at the given value of the independent variable and simplify.

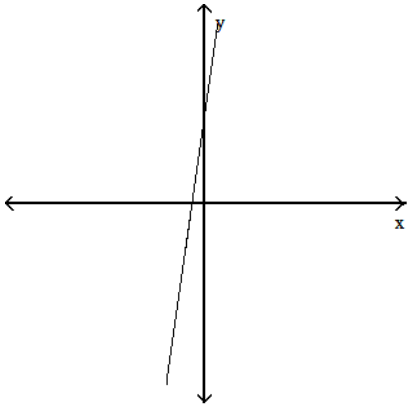
8) $f(x) = -3x + 7$; $f(4)$ 8) _____
A) -19 B) 4 C) 16 D) -5

9) $f(x) = 3x^2 - 2x + 7$; $f(x - 1)$ 9) _____
A) $3x^2 - 8x + 12$ B) $3x^2 - 8x + 8$ C) $3x^2 + 19x + 8$ D) $-8x^2 + 3x + 12$

10) $g(x) = 3x - 2$; $g(x + 1)$ 10) _____
A) $\frac{1}{3}x - 2$ B) $3x + 1$ C) $3x - 1$ D) $3x - 2$

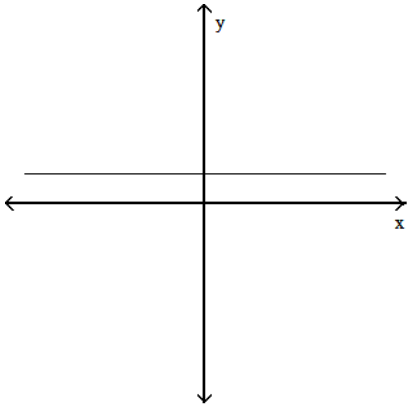
Use the vertical line test to determine whether or not the graph is a graph in which y is a function of x.

11) 11) _____



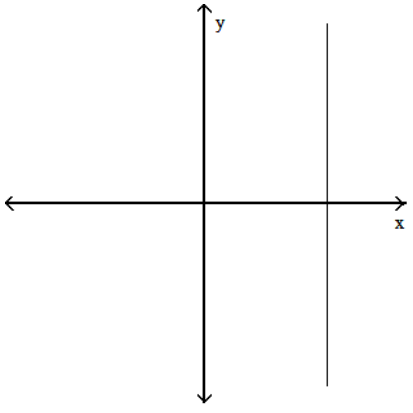
A) not a function B) function

12) 12) _____



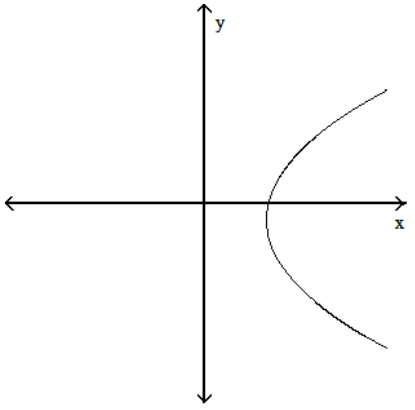
A) function B) not a function

13) 13) _____



A) not a function B) function

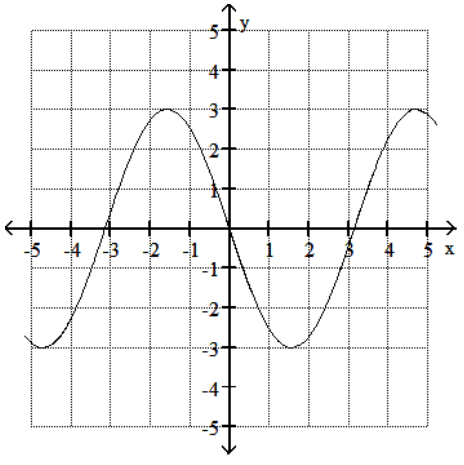
14) 14) _____



A) function B) not a function

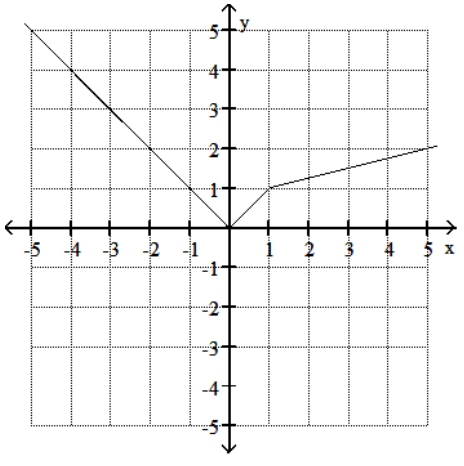
Use the graph to find the indicated function value.

15) y = f(x). Find f(1) 15) _____



A) -0.3 B) 0.3 C) -2.5 D) 2.5

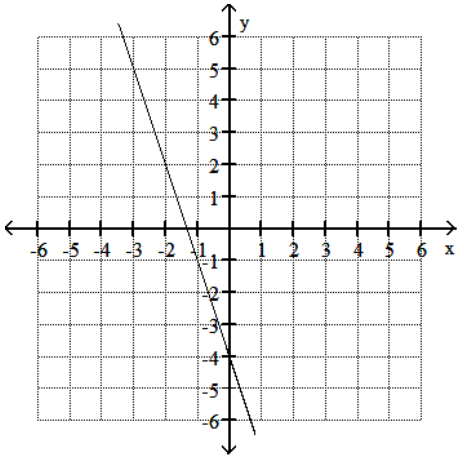
16) y = f(x). Find f(5). 16) _____



A) 17 B) -5 C) 2 D) 5

Use the graph to determine the function's domain and range.

17) 17) _____



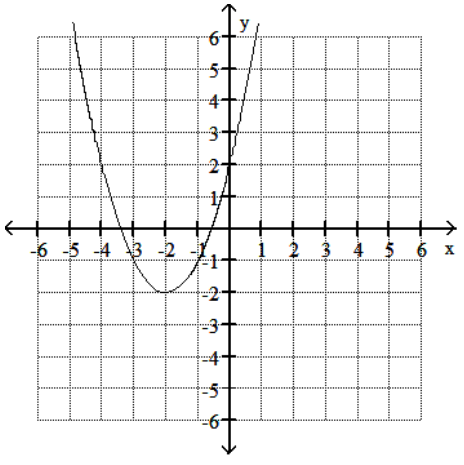
A) domain: $(-\infty, \infty)$
range: $y = -4$

B) domain: $x = -\frac{4}{3}$
range: $y = -4$

C) domain: $(-\infty, \infty)$
range: $(-\infty, \infty)$

D) domain: $x = -\frac{4}{3}$
range: $(-\infty, \infty)$

18) 18) _____



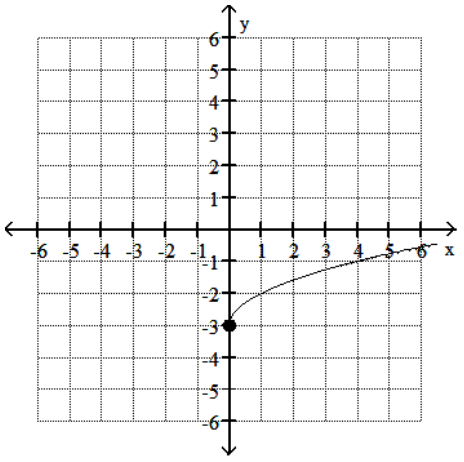
A) domain: $[-2, \infty)$
range: $[-2, \infty)$

B) domain: $(-\infty, \infty)$
range: $(-\infty, \infty)$

C) domain: $(-\infty, \infty)$
range: $[-2, \infty)$

D) domain: $(-\infty, -2)$ or $(-2, \infty)$
range: $(-\infty, -2)$ or $(-2, \infty)$

19) 19) _____



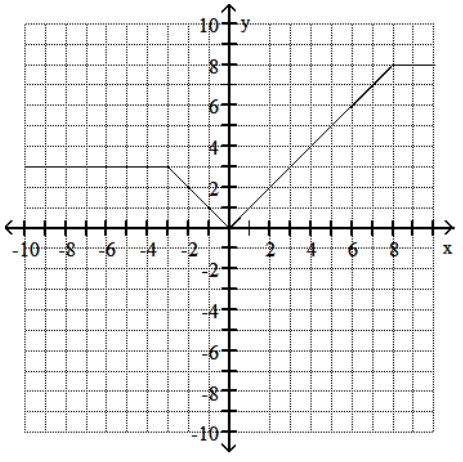
A) domain: $(-\infty, \infty)$
range: $[-3, \infty)$

B) domain: $[0, \infty)$
range: $(-\infty, \infty)$

C) domain: $[0, \infty)$
range: $[0, \infty)$

D) domain: $[0, \infty)$
range: $[-3, \infty)$

20) 20) _____



A) domain: $[0, 8]$
range: $(-\infty, \infty)$

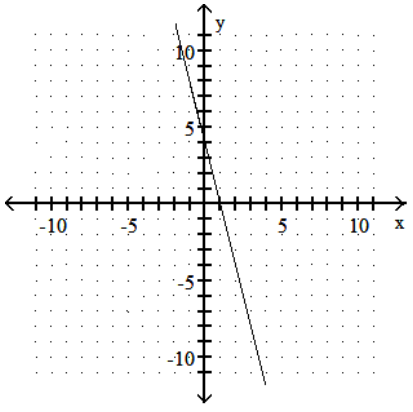
B) domain: $(-\infty, \infty)$
range: $[0, 8]$

C) domain: $[3, 8]$
range: $(-\infty, \infty)$

D) domain: $(-\infty, \infty)$
range: $[3, 8]$

Identify the intercepts.

21) 21) _____



A) $(-4, 0), (0, 4)$

B) $(-1, 0), (0, 4)$

C) $(1, 0), (0, -4)$

D) $(1, 0), (0, 4)$

Answer Key
Testname: 9_DEFINITION OF FUNCTIONS AND THEIR GRAPH

1) A
2) A
3) B
4) B
5) B
6) A
7) A
8) D
9) A
10) B
11) B
12) A
13) A
14) B
15) C
16) C
17) C
18) C
19) D
20) B
21) D