FUNCTIONS 1 (def, domain, range)

Name: _____   Date: _____

1. Which table represents *y* as a function of *x*?

   A.
x	1	2	3	2	1
y	1	2	3	4	5

   B.
x	4	5	4	3	2
y	−6	−5	−4	−3	−2

   C.
x	8	7	6	5	4
y	−1	2	−1	2	−1

   D.
x	3	4	3	2	3
y	0	1	2	1	3

2. Which relation is a function?

   F.
Input	Output
1	2
2	2
3	3
4	3

   G.
Input	Output
2	6
2	5
6	4
6	3

   H.
Input	Output
1	2
2	4
4	6
4	8

   J.
Input	Output
0	1
0	2
1	3
1	4

3. Which set or sets represent functions?

   $M = \{(1, -4), (2, 3), (4, 1), (5, 2)\}$

   $N = \{(4, 6), (2, 6), (-1, 6), (3, 6)\}$

   $R = \{(3, 7), (4, 9), (3, 3), (5, -1)\}$

   A. Set M only   B. Sets M and N only

   C. Sets M and R only   D. Sets M, N, and R

4. If $g(x) = 3|x - 2| - x$, what is $g(0.5)$?

   F. −5   G. −2   H. 1   J. 4
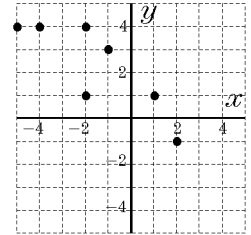
5. What is the domain of the given relation?

   $\{(2, 2), (3, 2), (2, 3), (1, 4)\}$

   A. $\{2, 3, 4\}$ B. $\{1, 2, 3\}$ C. $\{1, 4\}$
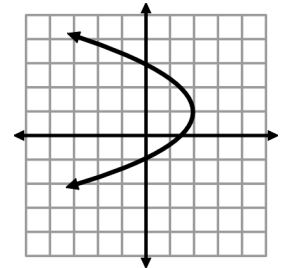
   D. $\{1, 2, 3, 4\}$ E. $\{2, 3\}$

6. Find the range of the relation shown.

   F. $\{-5, -4, -2, -1, 1, 2\}$

   G. $\{-5, -4, -2, -1, 1, 2, 3, 4\}$

   H. $\{-5, -4, -1, 1, 2\}$

   J. $\{-1, 1\}$

   K. $\{-1, 1, 3, 4\}$

7. Which best describes the domain of the relation graphed?

   A. $-1 \le y \le 3$

   B. $y \ge -1$

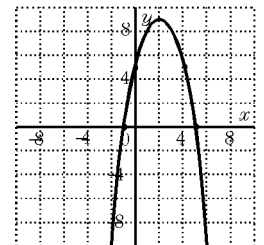   C. $x \le 2$

   D. all real numbers

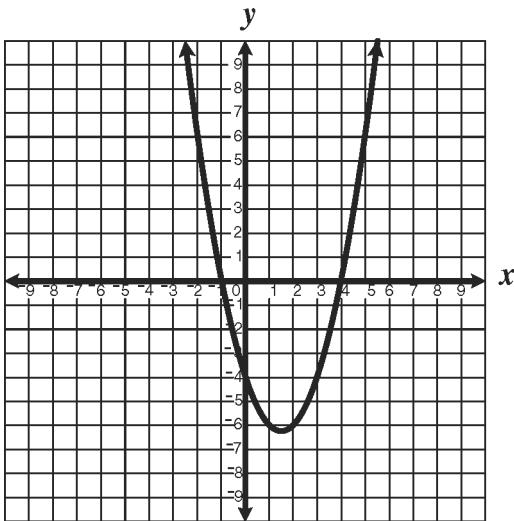8. Which of the following equations has a domain of all real numbers and a range where $y \le 1$?

   F. $y = -2(x - 3)^2 - 1$ G. $y = -2(x - 3)^2 + 1$

   H. $y = 2(x - 3)^2 - 1$ J. $y = 2(x - 3)^2 + 1$

9. What are the *x*- and *y*-intercepts?

   A. *x*-int: 1, 5; *y*-int: 5

   B. *x*-int: 5; *y*-int: 1, 5

   C. *x*-int: 5; *y*-int: −1, 5

   D. *x*-int: −1, 5; *y*-int: 5
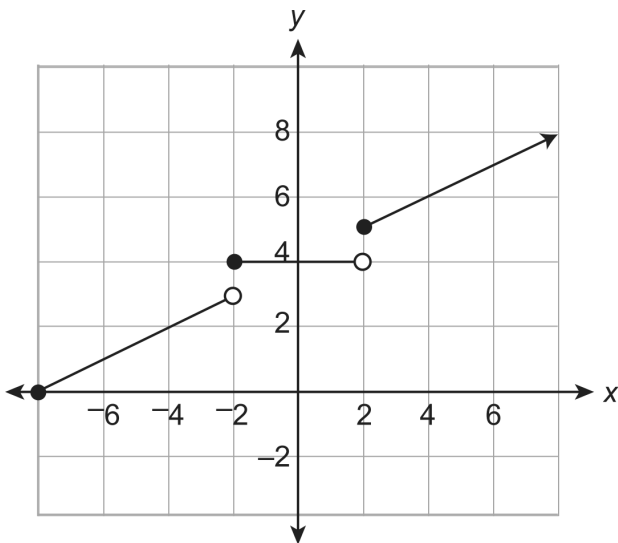
   E. *x*-int: 2; *y*-int: 9

10. The graph of the equation $y = x^2 - 3x - 4$ is shown below.

For what value or values of x is $y = 0$?

F. $x = -1$ only   G. $x = -4$ only

H. $x = -1$ and $x = 4$ J. $x = 1$ and $x = -4$

11. The graph of a function is shown below.

Which value is *not* in the range of the function?

A. 0   B. 3   C. 4   D. 5

12. What are the domain and range of the function $(x) = -|x - 3| + 2$?

F. Domain: all numbers less than or equal to 2. Range: all real numbers.

G. Domain: all numbers greater than or equal to 2. Range: all real numbers.

H. Domain: all real numbers. Range: all numbers greater than or equal to 2.

J. Domain: all real numbers. Range: all numbers less than or equal to 2.

13. Given $f(x) = -3x^2 + 5$, what is the range of the function?

A. all real numbers less than or equal to 5

B. all integers less than or equal to 5

C. all nonnegative real numbers

D. all nonnegative integers

14. Which of the following statements are true?

I. Any set of ordered pairs is a function.

II. The domain of a relation is the set containing the first members of its ordered pairs.

III. The independent variable in a relation is the variable used for the range.

IV. A function is a relation in which each domain value is paired with exactly one range value.

F. I   G. II   H. I and III

J. II and IV

15. What is the domain of the function?

$$f(x) = \frac{8}{x + 3} - 2$$

A. all real numbers except 2

B. all real numbers

C. all real numbers except 3

D. all real numbers except -3

     FUNCTIONS 1 (def, domain, range)

FUNCTIONS 1 (def, domain, range)   3/2/2018

1.
Answer: C

2.
Answer: F

3.
Answer: B

4.
Answer: J

5.
Answer: B
Objective: [A.7b]

6.
Answer: K
Objective: [A.7b]

7.
Answer: C
Objective: [A.7b]

8.
Answer: G
Objective: [A.7b]

9.
Answer: D
Objective: [A2.F.1.3]

10.
Answer: H

11.
Answer: B

12.
Answer: J

13.
Answer: A

14.
Answer: J
Objective: [F.IF.1]

15.
Answer: D
Objective: [F.IF.1]