

Directions: Please choose the best answer choice for each of the following questions.

1. Which of the following sets represent functions?

$$P = \{(2, 2)\}$$

$$Q = \{(1, 3)(2, 5)(2, 7)(3, 9)\}$$

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

- A. P only
 B. P and R only
 C. Q and R only
 D. P , Q , and R

Answer Choice Rationale

- A. No rationale available
 B. Correct
 C. No rationale available
 D. No rationale available

ItemID A2KC.1132252
 Correct B
 Standard(s) MA.9-12.MA.912.A.2.3

2. If $f(x) = 6x^2 - 3$ and $f(x) = 3$, then what is the value of x ?

- A. 1
 B. 2
 C. 6
 D. 12

Answer Choice Rationale

- A. Correct answer.
 B. This answer incorrectly solves the equation $6x^2 - 3 = 3$.
 C. If x was equal to 6, then $f(x)$ would be equal to 213.
 D. If x was equal to 12, then $f(x)$ would be equal to 861.

ItemID A2K.1021480
 Correct A
 Standard(s) MA.9-12.MA.912.A.2.3

3. Which equation shows $y = 2x - 4$ written correctly in function notation?

- A. $y = 2f(x) - 4$
 B. $y = f(2x) - 4$
 C. $f(y) = 2x - 4$
 D. $f(x) = 2x - 4$

Answer Choice Rationale

- A. The student mistakenly sees substituting $f(x)$ for x as correct.
 The student knows that there must be an $f()$ symbol, but they incorrectly think that it must be related to $2x$.
 B. The student sees $f(y)$ and mistakenly thinks that y and $f(y)$ must be equivalent.
 C. Correct answer.
 D. Correct answer.

ItemID A2K.1183464
 Correct D
 Standard(s) MA.9-12.MA.912.A.2.3

4. Which function can be represented by the relationship shown in the table?

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

- A. $f(x) = x + 1$
 B. $f(x) = x^2 + 1$
 C. $f(x) = \sqrt{x+1}$
 D. $f(x) = (x+1)^2$

Answer Choice Rationale

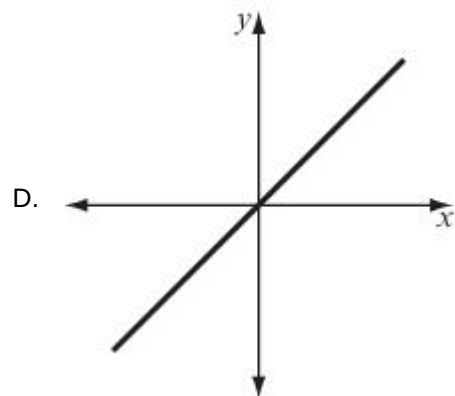
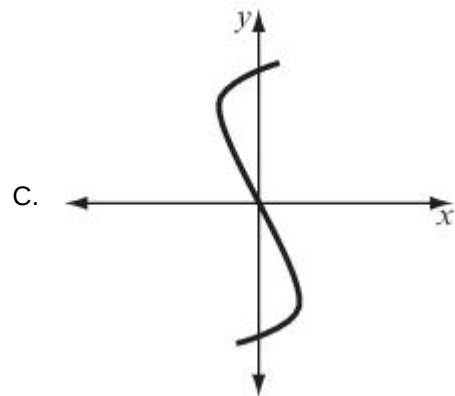
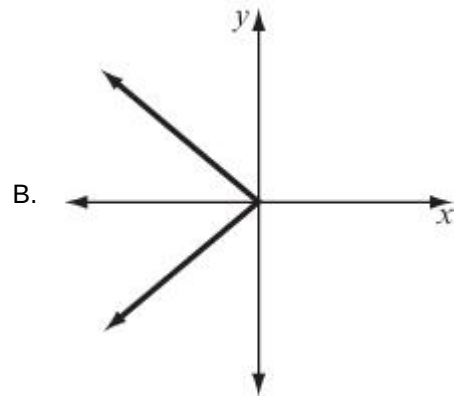
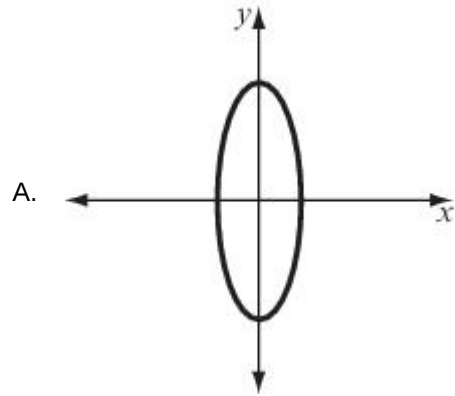
- A. No rationale available
 B. Correct
 C. No rationale available

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D. No rationale available

ItemID A2K.1024809
Correct B
Standard(s) MA.9-12.MA.912.A.2.3

5. Which of the following graphs represents a function?



Answer Choice Rationale

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- A. This graph does not pass the vertical line test and so is not a function.
- B. This graph passes the horizontal line test but not the vertical line test.
- C. This graph does not pass the vertical line test, which shows there is not one unique y value for each value of x .
- D. Correct answer.

ItemID A2K.1018893

Correct D

Standard(s) MA.9-12.MA.912.A.2.3

Stop! You have finished this exam.