

**STANDARD III:** The student will be able to apply concepts related to functions.

**OBJECTIVE**

2. Find the range of functions when given the domain.

Domain = the X's  
Range = the Y's

Memory Aid: alphabetical order  
(X,Y) or (D,R)

**ELIGIBLE CONTENT**

- The domain of a function may be a single value or a set of values.
- A set of ordered pairs may be used.
- Functions may be expressed using either the terminology “ $f(x) =$ ” or “ $y =$ ”.

**SAMPLE ITEMS**

**1** What is the range of this function?

$\{(-3, 4), (0, 0), (1, -2), (3, 2)\}$

- A  $\{-2, 4\}$
- B  $\{-3, 3\}$
- C  $\{-2, 0, 2, 4\}$
- D  $\{-3, 0, 1, 3\}$

**2** What is the range of  $y = 3x^2 - 5$  if the domain is  $\{-2, 0, 1\}$ ?

- A  $\{2, 0, -1\}$
- B  $\{2, 3, 5\}$
- C  $\{4, 0, 1\}$
- D  $\{7, -5, -2\}$

**3** If  $f(x) = -x^2 + 2x - 3$ , what is  $f(4)$ ?

- A -11
- B -3
- C 13
- D 21

**Function Notation**

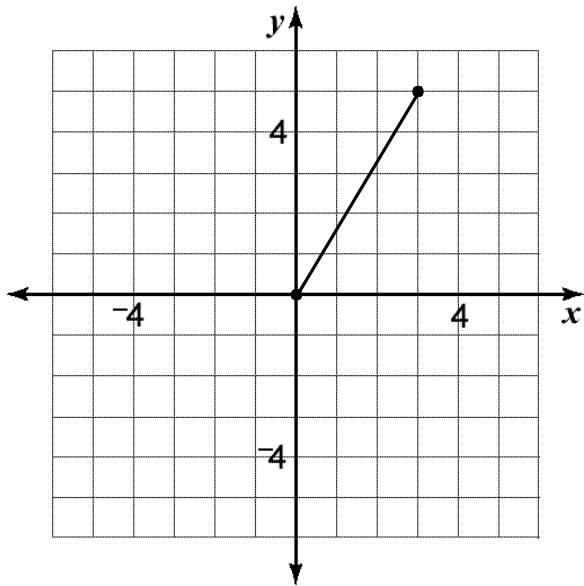
① Write the function  
② Directly below write with ( ) for every K

① →  $f(x) = -x^2 + 2x - 3$

② →  $f(\ ) = -(\ )^2 + 2(\ ) - 3$

\*  $\underbrace{\quad\quad\quad}_{4 \quad 4 \quad 4}$

**4** What is the range of the function shown on the graph?



- A  $3 \leq y \leq 5$
- B  $2 \leq y \leq 5$
- C  $0 \leq y \leq 3$
- D  $0 \leq y \leq 5$