

## A.12A Decide Whether Relations Define a Function

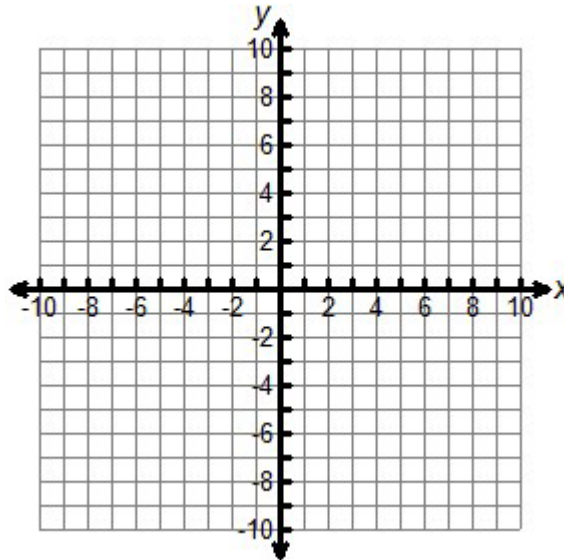
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- 1** Which of these sets of ordered pairs below does not represent a function?
- A**  $\{(1, 1) (2, 2) (3, 3) (4, 4) (5, 5)\}$
- B**  $\{(2, 1) (4, 2) (6, 3) (8, 1) (10, 2)\}$
- C**  $\{(0, 0) (2, 3) (3, 6) (2, 9) (6, 12)\}$
- D**  $\{(1, 5) (2, 4) (3, 3) (4, 2) (5, 1)\}$
- 2** Which of these descriptions below represents a graph that cannot be defined as a function?
- A** A parabola which contains the points:  
 $(-1, 0), (0, 1), (0, -1), (3, 2), (3, -2)$
- B** A line which contains the points:  $(-2, -2), (-1, -1), (0, 0), (1, 1), (2, 2)$
- C** parabola which contains the points:  $(-2, 9), (0, 1), (1, 0), (3, 4), (4, 9)$
- D** An absolute value graph which contains the points:  $(-6, 2), (-5, 1), (-4, 0), (-3, 1), (-2, 2)$

3 A blank graph has been provided below.



Which set of points would NOT define a function?

- A  $\{(-2, -2), (-1, -1), (0, 0), (1, 1), (2, 2)\}$
- B  $\{(-2, 9), (0, 1), (1, 0), (3, 4), (4, 9)\}$
- C  $\{(-6, 2), (-5, 1), (-4, 0), (-3, 1), (-2, 2)\}$
- D  $\{(-1, 0), (0, 1), (0, -1), (3, 2), (3, -2)\}$

4 Which table does NOT show  $y$  as a function of  $x$ ?

**A**

$x$	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{2}$
$y$	9	11	9	14	7

**B**

$x$	14	15	16	17	18
$y$	100	80	110	100	90

**C**

$x$	-0.2	0.6	-1.3	1.0	-0.2
$y$	5.8	-3.7	4.4	-0.9	8.1

**D**

$x$	-24	21	24	-27	29
$y$	2.7	2.8	2.7	2.5	2.5

5 Which table represents  $y$  as a function of  $x$ ?

**A**

$x$	$y$
-5	-5
3	-2
-5	5
-3	-2

**B**

$x$	$y$
6	-6
-6	6
8	-8
-8	8

**C**

$x$	$y$
-3	-4
1	4
-3	4
1	-4

**D**

$x$	$y$
2	-1
2	-2
2	-3
2	-4

6 Which table represents  $m$  as a function of  $t$ ?

**A**

$t$	$m$
3	4
3	3
3	2
3	1

**B**

$t$	$m$
-9	2
9	-2
-2	9
2	-9

**C**

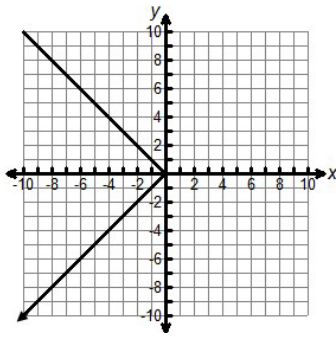
$t$	$m$
-4	5
7	-5
-4	-5
7	5

**D**

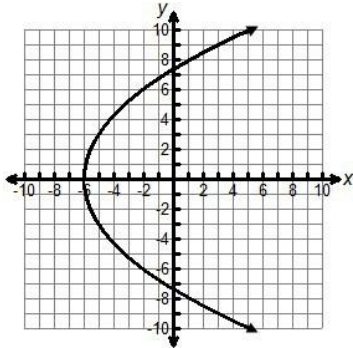
$t$	$m$
-8	1
-6	-6
8	-1
-6	-6

7 Which graph below represents a functional relationship?

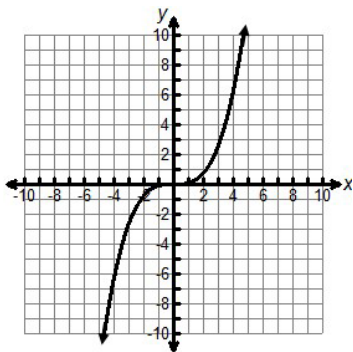
A



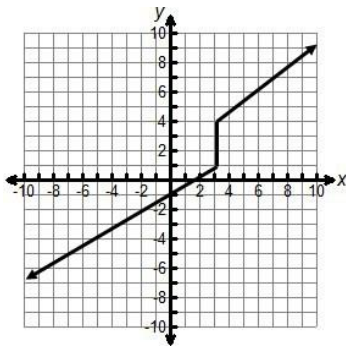
B



C

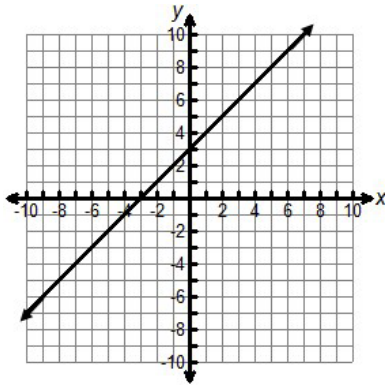


D

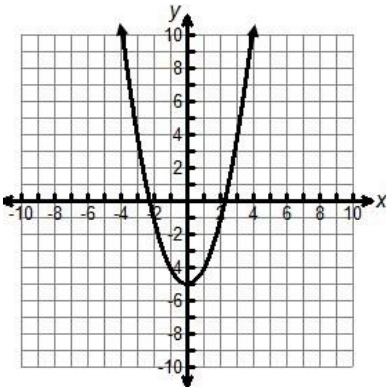


8 Which graph below represents a non-functional relationship?

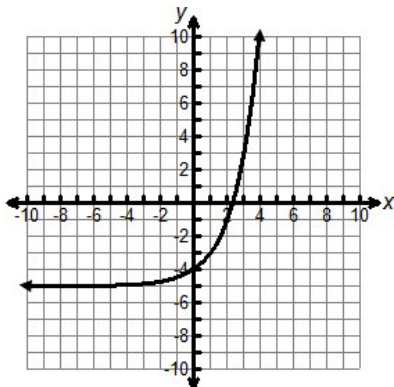
A



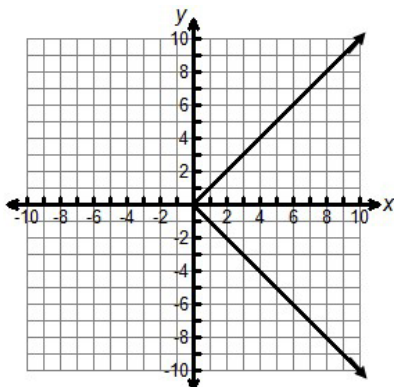
B



C



D





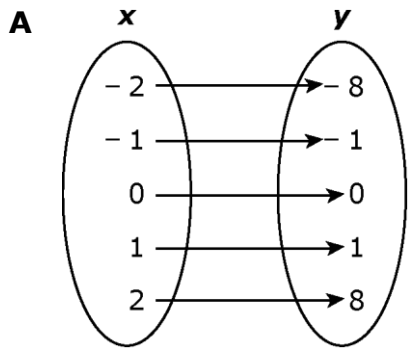
**9** Which representation describes a functional relationship?

- A**  $f(x) = 2^x + 8$
- B**  $y = -3x + 2$
- C** The height of a person throughout their lifetime.
- D** All of the above

**10** Which situation does NOT represent a functional relationship?

- A** Dave is a construction supervisor for several jobsites. When Dave secures a contract for an additional job, he must hire 5 new construction workers to cover that jobsite. The number of construction workers Dave oversees is related to the number of jobsites under Dave's supervision.
- B** Betsy opened an account with \$2,500 she had saved from a summer job. During the school year, she withdrew \$200 each month from the account. The amount of money in Betsy's account is related to the number of months since Betsy opened the account.
- C** As a zoo veterinarian, Wanda is in charge of ordering vitamins for the spider monkeys. To be healthy, each monkey receives 3 vitamins. The number of vitamins that Wanda must order to have healthy spider monkeys is related to how many spider monkeys are kept at the zoo.
- D** Once a week, Rockwell participates in a soccer exercise. Based on Rockwell's performance, the soccer coach assigns two scores to Rockwell's evaluation form. How well Rockwell did on his performance as indicated by his scores is related to the number of weeks since Rockwell started practicing.

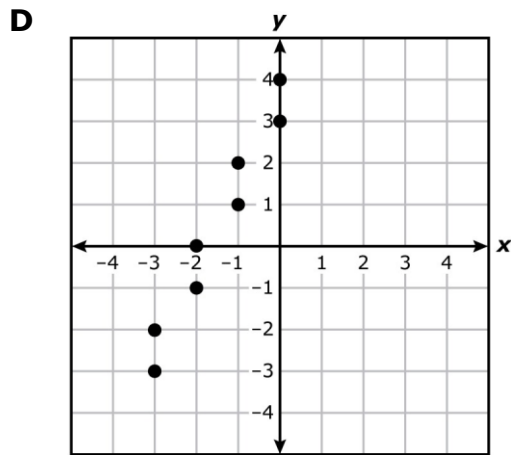
11 Which representation does not show  $y$  as a function of  $x$ ?



**B**  $\{(-1, -2), (0, 1), (2, 4), (7, 7)\}$

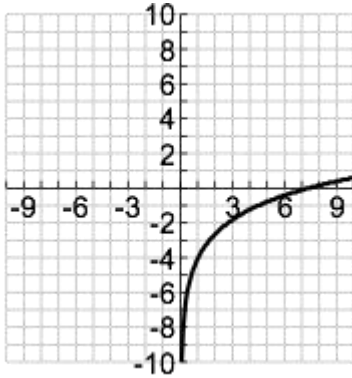
**C**

$x$	$y$
2	-6
5	-1
7	-1
8	3



12 Of the relations shown below, which does not represent a functional relationship?

A



B  $\{(-1,3),(5,8),(3,6)\}$

C number of fastballs a pitcher throws,  $x$ , and the score of the opposing team,  $y$

D

$x$	$y$
0	5
3	-4
6	-3
9	-2