

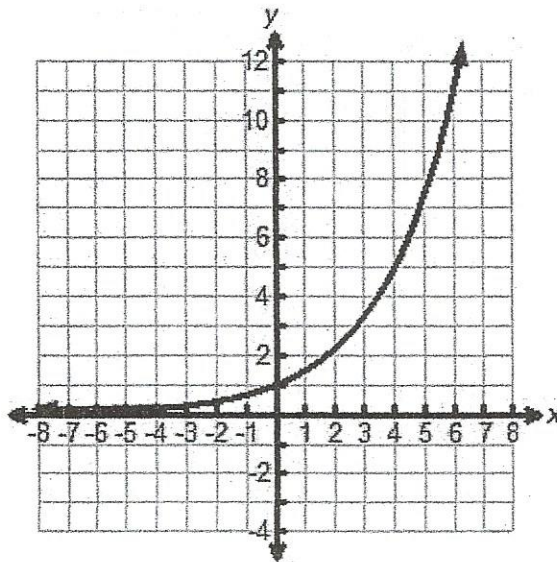


3. The function  $f(x) = 2x + 4$  is restricted to a domain interval of  $-2 \leq x \leq 2$ . What is the <sup>y</sup> range of the function?

$$\underline{\phi \leq y \leq 8}$$

$$\begin{array}{l|l} f(x) = 2x + 4 & f(x) = 2x + 4 \\ y = 2(-2) + 4 & y = 2(2) + 4 \\ y = -4 + 4 & y = 4 + 4 \\ y = \phi & y = 8 \end{array}$$

4. An exponential function is shown below.



What are the <sup>x</sup> domain and <sup>y</sup> range for the representative exponential function?

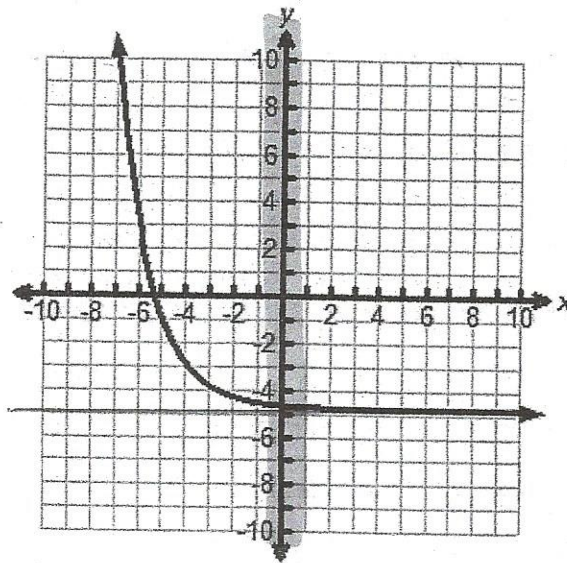
- a. Domain:  $y > 0$   
Range:  $x \in \mathbb{R}$
- b. Domain:  $x \in \mathbb{R}$   
Range:  $y \geq 0$
- c. Domain:  $y \geq 0$   
Range:  $x \in \mathbb{R}$
- Domain:  $x \in \mathbb{R}$   
Range:  $y > 0$

$$-\infty < x < \infty$$

All Real #

$$\mathbb{R}$$

5. The graph of an exponential function is shown on the grid below.



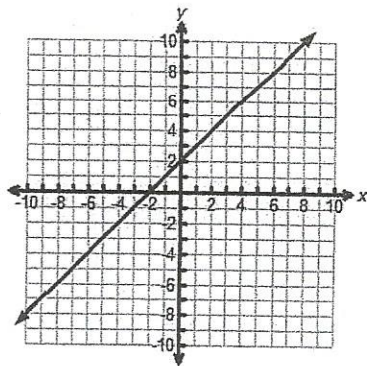
What is the range?

$y > -5$

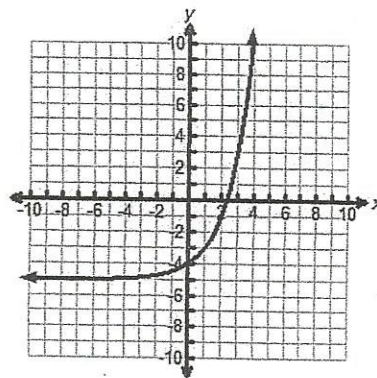
6. Which graph below represents a non-functional relationship?

Why? Fails Vertical Test  $\rightarrow$  x values repeat

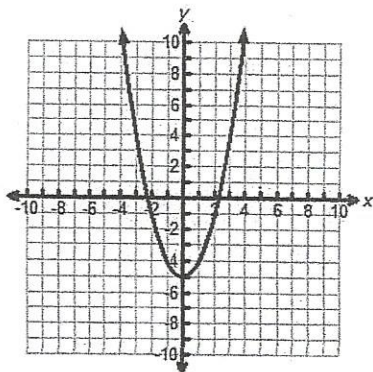
F



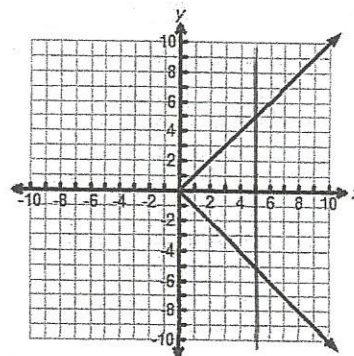
H



G



J



7. Which table represents  $m$  as a function of  $t$ ?

Why?

The  $x$  values (domain) does not repeat

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



8. The distance in meters of a basket suspended on a spring to a tabletop below is dependent on the number of steel bearings in the basket. The function representing this relationship is  $d(m) = 7 - 2m$ , where  $d(m)$  represents the distance in meters, and  $m$  represents the number of steel bearings in the basket. Which set represents the range of the function  $d(m) = 7 - 2m$  when  $m \in \{0, 1, 2, 3\}$ ?

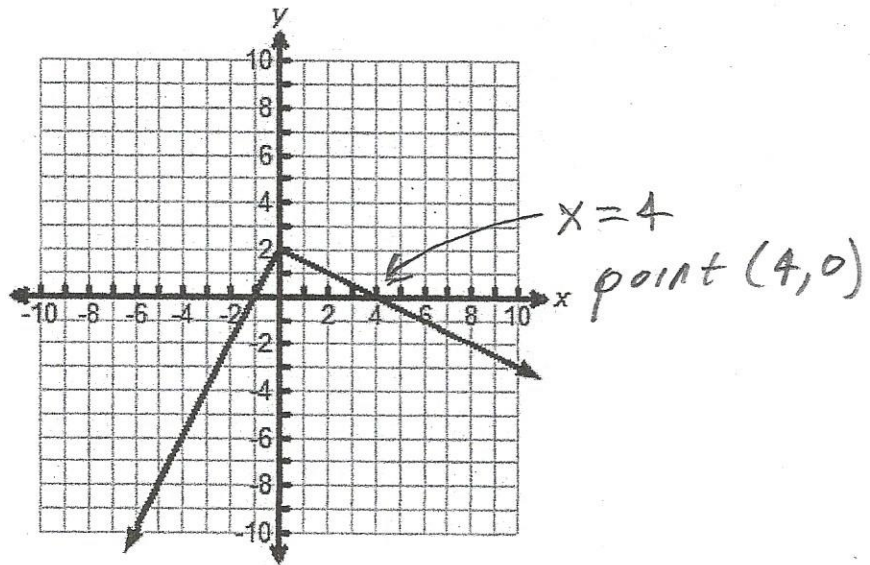
$$d(m) = 7 - 2m$$

$\uparrow$                        $\uparrow$   
 output                  input  
 Range                  Domain

Range  $\{1, 3, 5, 7\}$

$d(0) = 7 - 2(0)$ $= 7 - \phi$ $= 7$	$d(1) = 7 - 2(1)$ $= 7 - 2$ $= 5$
$d(2) = 7 - 2(2)$ $= 7 - 4$ $= 3$	$d(3) = 7 - 2(3)$ $= 7 - 6$ $= 1$

9. The graph below represents a function.



What is the value of  $f(4)$ ?

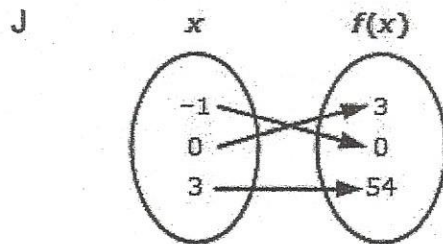
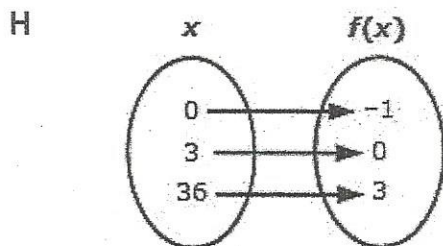
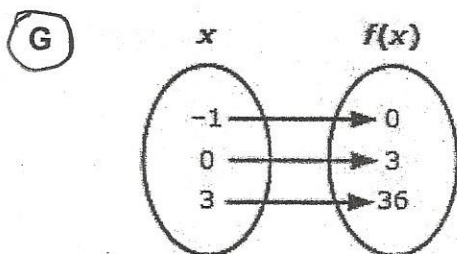
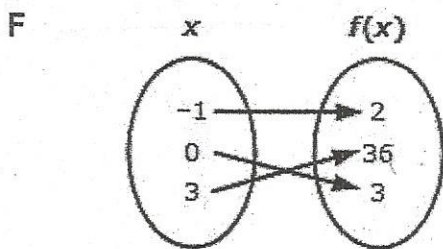
$\phi$

$$f(x) = y$$

$\uparrow$   
 $f(4)$

10. Which mapping best represents the function  $f(x) = 2x^2 + 5x + 3$  when the domain is  $\{-1, 0, 3\}$ ?

SHOW YOUR WORK



$$\begin{aligned}
 f(-1) &= 2(-1)^2 + 5(-1) + 3 \\
 &= 2(1) - 5 + 3 \\
 &= 2 - 5 + 3 \\
 &= 0
 \end{aligned}$$

$$\begin{aligned}
 f(0) &= 2(0)^2 + 5(0) + 3 \\
 &= 2(0) + 0 + 3 \\
 &= 3
 \end{aligned}$$

$$\begin{aligned}
 f(3) &= 2(3)^2 + 5(3) + 3 \\
 &= 2(9) + 15 + 3 \\
 &= 18 + 18 \\
 &= 36
 \end{aligned}$$