

Week 1 practice

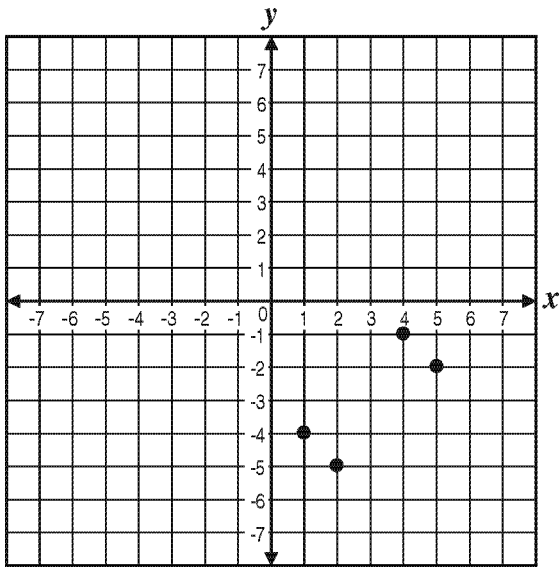
Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. What is the inverse of the function  $y = 2x + 3$ ?

- A.  $x = \frac{1}{2}y - \frac{3}{2}$       B.  $y = \frac{1}{2}x - \frac{3}{2}$   
C.  $y = 2x - 3$       D.  $x = -2y - 3$

2. What is the domain of the function shown on the graph below?



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

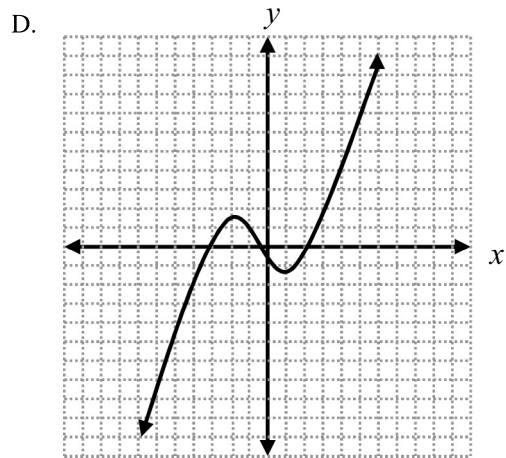
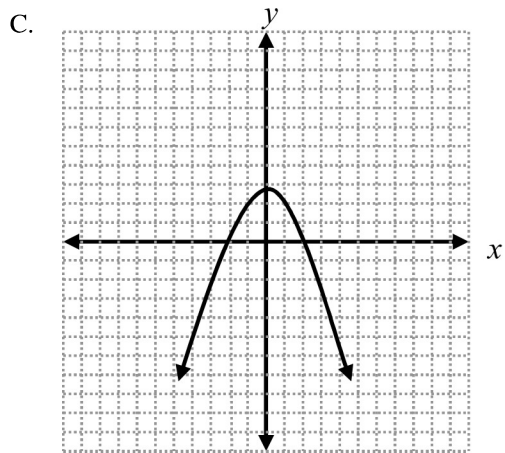
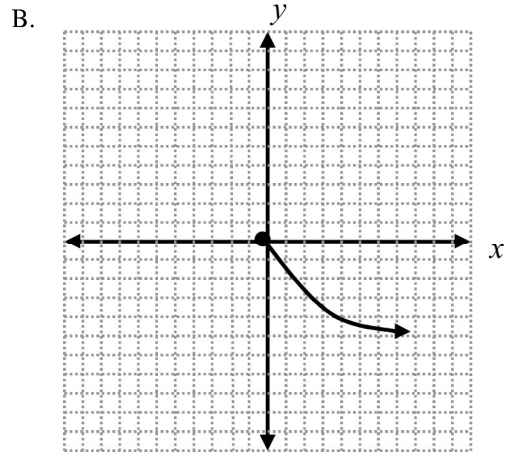
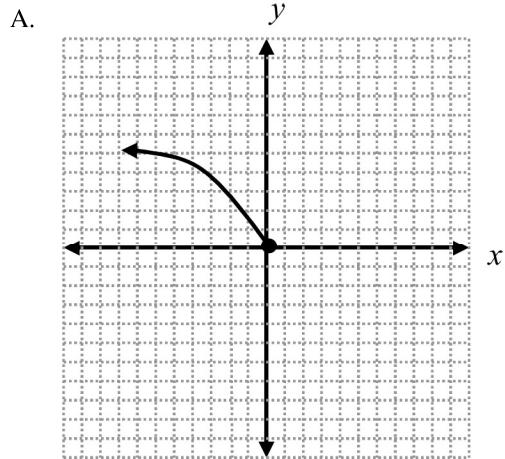
3. What is the *domain* of the function

$$f(x) = 2x - 3$$

when the range is  $\{-9, -3, 1\}$ ?

- A.  $\{-21, -9, -1\}$       B.  $\{-2, 0, 6\}$   
C.  $\{-8, -2, 2\}$       D.  $\{-3, 0, 2\}$

4. Which of the following functions of  $x$  has the apparent range of  $\{y : y \leq 0\}$ ?



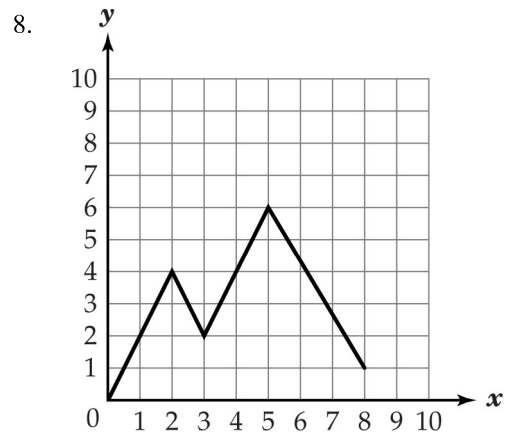
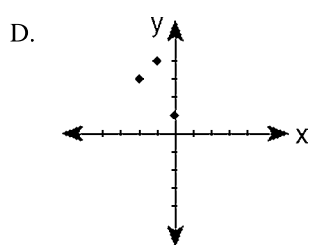
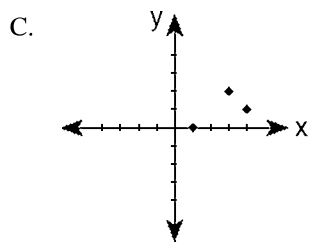
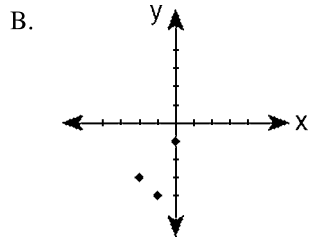
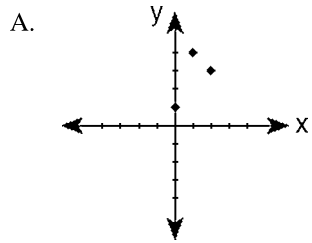
5. What is the domain of  $f(x) = \frac{x}{2x^2 - 5x - 3}$ ?

- A.  $\{x | -\infty < x < \infty\}$     B.  $\{x | x \neq 0\}$   
 C.  $\{x | x \neq -\frac{1}{2}, x \neq 3\}$     D.  $\{x | x \neq -3, x \neq \frac{1}{2}\}$

6. What is the inverse of the function  $x + 2y + 3 = 0$ ?

- A.  $y = -\frac{1}{2}x - \frac{3}{2}$     B.  $y = -2x - 3$   
 C.  $2y + x + 3 = 0$     D.  $2x - y + 3 = 0$

7. Which graph represents the inverse of  $f(x) = \{(0, 1), (1, 4), (2, 3)\}$  ?



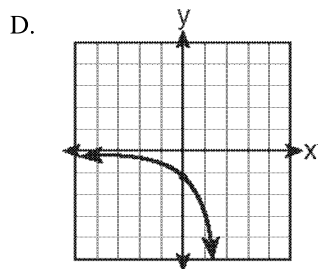
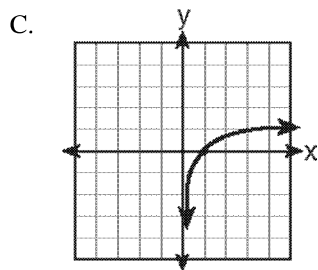
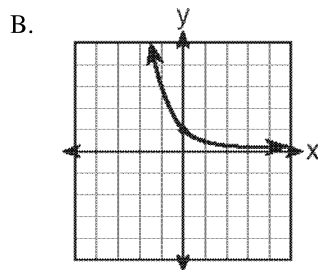
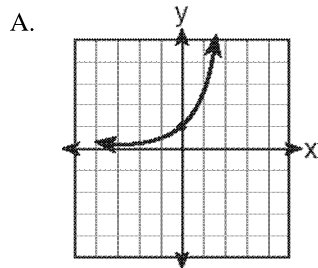
What is the domain of this function?

- A.  $0 \leq x \leq 5$
- B.  $0 \leq x \leq 8$
- C.  $0 \leq y \leq 1$
- D.  $0 \leq y \leq 6$

9. What is the domain of the function  $f(x) = \sqrt{x^2 - 3x - 10}$ ?

- A.  $-2 \leq x \leq 5$
- B.  $x \leq -2$  or  $x \geq 5$
- C.  $x \geq 5$
- D.  $x \geq -2$

10. Which graph represents the inverse of the equation  $y = 3^x$ ?



11. What is the domain of  $f(x) = -2x^3 + x^2 + 1$ ?

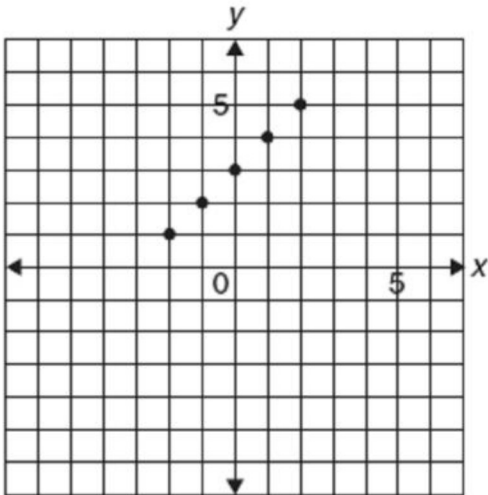
- A. the set of all real numbers
- B.  $\{x \mid -3 < x < 2\}$
- C.  $\{x \mid -2 < x < 3\}$
- D. the empty set

12. A certain function is represented by  $g(x) = 4 - 3x$ . If the range of this function is  $\{-5, 4, 7\}$ , what is the domain of the function?

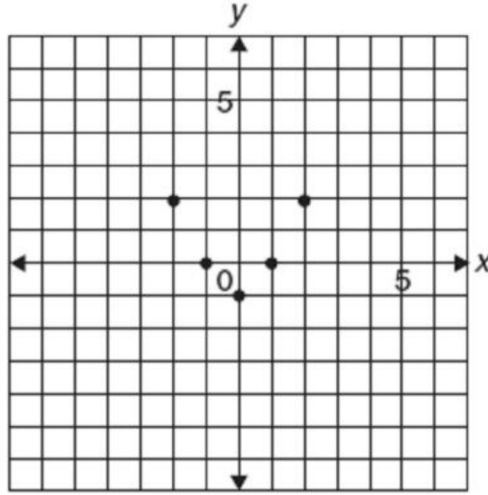
- A.  $\{15, -8, -17\}$
- B.  $\{3, 0, -1\}$
- C.  $\{-3, 0, 1\}$
- D.  $\{-11, -8, -17\}$

13. Which of the following functions of  $x$  has an appearance range of  $\{-1, 0, 2\}$ ?

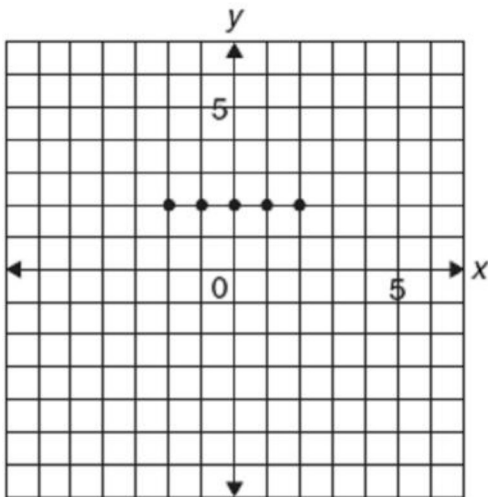
A.



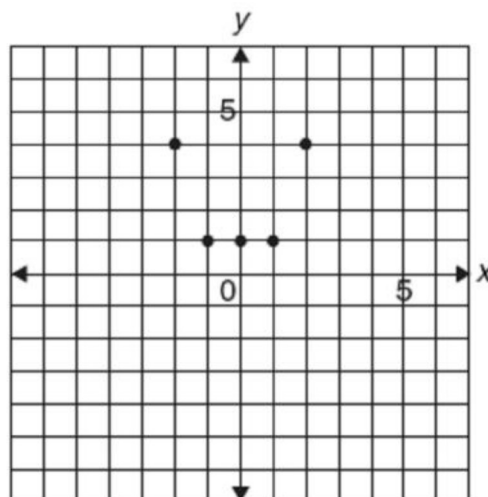
B.



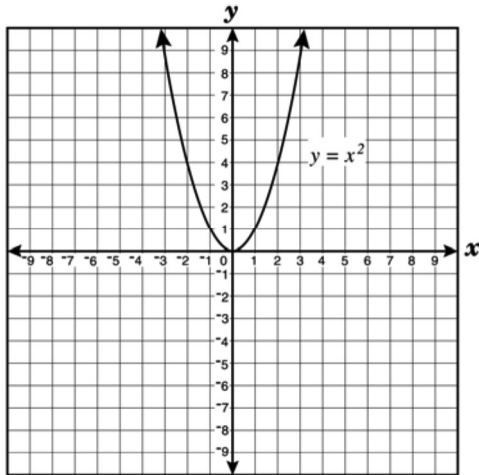
C.



D.



14. The following is the graph of the equation  $y = x^2$ , in which  $y$  is a function of  $x$ .



Which of these describes the *range* of the function?

- A.  $x$  is all real numbers  
 B.  $y$  is all real numbers  
 C.  $y \geq 0$   
 D.  $x \geq 0$
15. The inverse function of  $\{(2, 6), (-3, 4), (7, -5)\}$  is
- A.  $\{(-2, 6), (3, 4), (-7, -5)\}$   
 B.  $\{(2, -6), (-3, -4), (7, 5)\}$   
 C.  $\{(6, 2), (4, -3), (-5, 7)\}$   
 D.  $\{(-6, -2), (-4, 3), (5, -7)\}$

16. The inverse of the function  $y = 2x - 5$  is
- A.  $y = \frac{1}{2}(x + 5)$       B.  $y = \frac{1}{2}(x - 5)$   
 C.  $y = 2x + 5$       D.  $y = 5 - 2x$

17. A function is defined by the equation  $y = 2x + 3$ . Which equation defines the inverse of this function?

- A.  $y = \frac{1}{2}x + \frac{1}{3}$       B.  $x = \frac{1}{2}y - \frac{3}{2}$   
 C.  $y = -2x - 3$       D.  $y = \frac{1}{2}x - \frac{3}{2}$

18. What is the range of the function  $f(x) = x^2 + 3$  if the domain is  $\{-3, 0, 3\}$ ?

- A.  $\{3, 12\}$   
 B.  $\{-6, 3, 12\}$   
 C. all real numbers  
 D. all real numbers greater than or equal to 3

19. 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

20. Which equation defines a function whose inverse is *not* a function?

- A.  $y = |x|$
- B.  $y = -x$
- C.  $y = 3x + 2$
- D.  $y = 2^x$