

TEST NAME: **Math 3 Inverses Practice Test Fall 2018**  
TEST ID: **2575580**  
GRADE: **09 - Ninth Grade - 12 - Twelfth Grade**  
SUBJECT: **Mathematics**  
TEST CATEGORY: **School Assessment**

10/02/18, Math 3 Inverses Practice Test Fall 2018

Student: \_\_\_\_\_

Class: \_\_\_\_\_

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

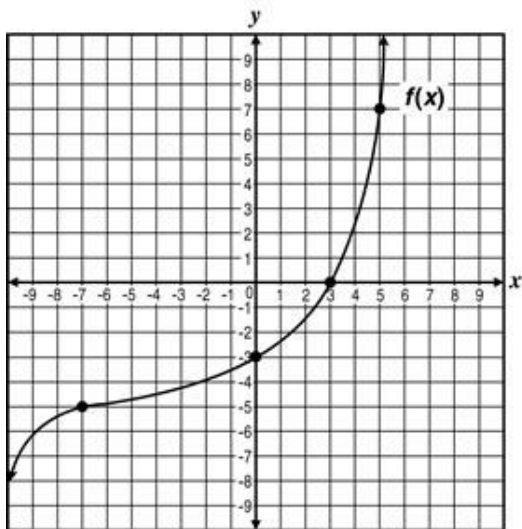
1. The table of values represents all points in the function  $g(x)$ .

$x$	$g(x)$
-6	3
-3	9
0	-3
3	-1
5	6

What is the value of  $g^{-1}(3)$ ?

- A. -1
- B. -6
- C. 9
- D. 0

2. The graph of the function  $f(x)$  is shown on the coordinate plane.



Which value is closest to  $f^{-1}(-5)$ ?

- A. -7  
B. -5  
C. -4  
D. -2
3. The domain of the function  $f(x) = (x + 2)^2 + 3$  is restricted to  $(-\infty, -2]$  to produce an invertible function  $g(x) = (x + 2)^2 + 3$ . What is the domain of  $g^{-1}$ ?

- A.  $(-\infty, \infty)$   
B.  $(-\infty, -2]$   
C.  $[-2, -\infty)$   
D.  $[3, \infty)$

4. What is the inverse function of  $f(x) = \frac{4}{x-3}$  ? ( $x \neq 3$ )

A.  $f^{-1}(x) = \frac{4}{x} + 3$  ( $x \neq 0, 3$ )

B.  $f^{-1}(x) = \frac{4}{x} - 3$  ( $x \neq 0, 3$ )

C.  $f^{-1}(x) = \frac{x-3}{4}$  ( $x \neq 3$ )

D.  $f^{-1}(x) = \frac{7}{x}$  ( $x \neq 0, 3$ )

5. What is the inverse of  $f(x) = 5x + 6$ ?

A.  $f^{-1}(x) = -5x - 6$

B.  $f^{-1}(x) = \frac{x-6}{5}$

C.  $f^{-1}(x) = \frac{x-5}{6}$

D.  $f^{-1}(x) = 6x + 5$

6. Which equation represents the inverse,  $f^{-1}(x)$ , of the function  $f(x) = 3x + 1$ ?

A.  $f^{-1}(x) = \frac{1}{3}x + 1$

B.  $f^{-1}(x) = \frac{1}{3}x - 1$

C.  $f^{-1}(x) = \frac{1}{3}x - \frac{1}{3}$

D.  $f^{-1}(x) = \frac{1}{3}x + \frac{1}{3}$

7. What is the inverse function of  $y = \sqrt{x - \frac{1}{2}}, x \geq \frac{1}{2}$ ?

A.  $y = x^2 + \frac{1}{2}, x \geq 0$

B.  $y = x^2 - \frac{1}{2}, x \geq 0$

C.  $y = x^2 + \frac{1}{4}, x \geq 0$

D.  $y = x^2 - \frac{1}{4}, x \geq 0$

8. What is the inverse function of  $y = 4x^2 - 16$ ?

A.  $y = \sqrt{\frac{x}{4} + 4}; x \geq -16$

B.  $y = \frac{\sqrt{x} + 4}{2}; x \geq 0$

C.  $y = \sqrt{x + 4}; x \geq -4$

D.  $y = \frac{\sqrt{x + 16}}{4}; x \geq -16$

9. The point  $(5, -8)$  lies on the graph of the function,  $f(x)$ . Which of the following points lies on the graph of the function's inverse,  $f^{-1}(x)$ ?

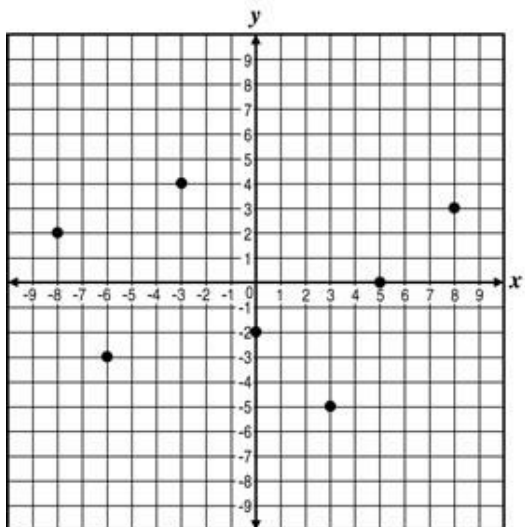
A.  $(-8, 5)$

B.  $\left(\frac{1}{5}, -\frac{1}{8}\right)$

C.  $(-5, 8)$

D.  $\left(-\frac{1}{5}, \frac{1}{8}\right)$

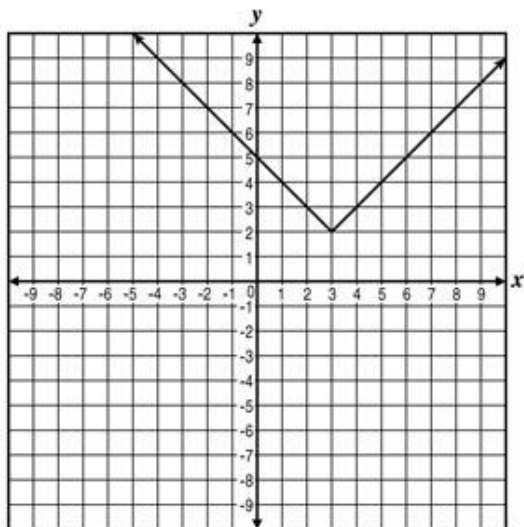
10. The graph of the function  $f(x)$  is shown on the coordinate plane.



Which value is closest to  $f^{-1}(-3)$ ?

- A. -6
- B. -5
- C. 4
- D. 8

11. Function  $g$  is graphed below.



For which restrictions of the domain is the inverse of function  $g$  not a function?

- A.  $-\infty \leq x \leq 0$
- B.  $0 \leq x \leq 3$
- C.  $1 \leq x \leq 5$
- D.  $3 \leq x \leq \infty$

12. The inverse of  $f(x) = 2x^3 - 6x^2 - 36x + 1$  is not a function. Which of the restrictions on the domain of  $f(x)$  ensures that  $f^{-1}(x)$  is a function?

- I  $-\infty < x < -2$
  - II  $3 \leq x < \infty$
  - III  $-2 \leq x < 3$
- A. I only
  - B. I and II only
  - C. III only
  - D. I, II, and III

13. The inverse of the function  $f(x) = x^2 + 6x + 5$  is not a function. Which restriction of  $f(x)$  ensures that the inverse of  $f(x)$  is a function?
- A. restrict the domain of  $f(x)$  to  $-5 \leq x \leq -1$
  - B. restrict the range of  $f(x)$  to  $-4 \leq f(x) \leq 0$
  - C. restrict the domain of  $f(x)$  to  $-3 \leq x \leq -1$
  - D. restrict the range of  $f(x)$  to  $0 \leq f(x) \leq 5$
14. What is the inverse function of  $y = \sqrt{x+3}$ , given  $x \geq -3$ ?
- A.  $y = -\sqrt{x+3}; x \geq -3$
  - B.  $y = \sqrt{x-3}; x \geq 3$
  - C.  $y = x^2 + 9; x \geq 0$
  - D.  $y = x^2 - 3; x \geq 0$
15. A function is defined by the equation  $y = 3x - 8$ . Which equation represents the inverse of this function?
- A.  $y = \frac{1}{3x-8}$
  - B.  $y = 8 - 3x$
  - C.  $y = \frac{3}{x} + \frac{8}{3}$
  - D.  $y = \frac{x+8}{3}$