Student: Cole Lamers **Date:** 06/16/19	**Instructor:** Kelly Galarneau **Course:** CA&T Internet (70263) Galarneau	**Assignment:** 2.9 Inverse Functions

1. Complete the following statement.

   If no horizontal line intersects the graph of a function f in more than one point, then f _____ a one-to-one function.

   If no horizontal line intersects the graph of a function f in more than one point, then f is a one-to-one function.

2. Complete the following statement.

   If $f(x) = 3x$, then $f^{-1}(x) =$ _____.

   What is the value of $f^{-1}(x)$?

   $\frac{1}{3}x$

3. Determine whether the following statement is true or false.

   If a function f has an inverse, then the domain of the inverse function is the range of f.

   Choose the correct answer below.

   - (●) True
   - ( ) False

4. Watch the video and then solve the problem given below.

   Click here to watch the video.[1]

   Assume that f is a one-to-one function. If $f(-3) = 11$, find $f^{-1}(11)$.

   $f^{-1}(11) =$ -3
   (Simplify your answer.)

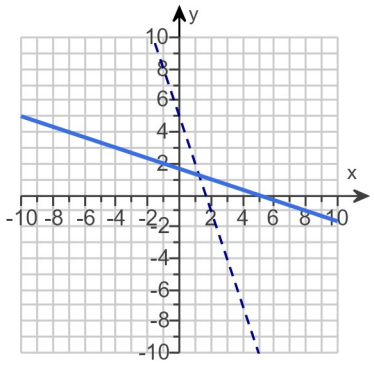
   1: http://mediaplayer.pearsoncmg.com/assets/LJ04VogW6qf5msRB2eNcRsvkz_WM6Ocd?clip=2

5.

Watch the video and then solve the problem given below.

Click here to watch the video.[2]

The graph of a function f is shown. Sketch the graph of f^{-1}.



Use the graphing tool to graph the function.

2: http://mediaplayer.pearsoncmg.com/assets/LJ04VogW6qf5msRB2eNcRsvkz_WM6Ocd?clip=4

6. Watch the video and then solve the problem given below.

Click here to watch the video.[3]

Find the inverse of the one-to-one function $f(x) = 2x - 7$.

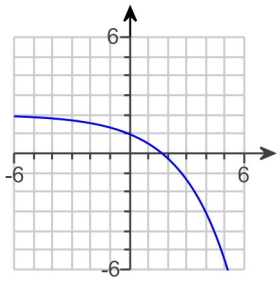
$f^{-1}(x) = \frac{x+7}{2}$

(Simplify your answer.)

3: http://mediaplayer.pearsoncmg.com/assets/LJ04VogW6qf5msRB2eNcRsvkz_WM6Ocd?clip=8

7.

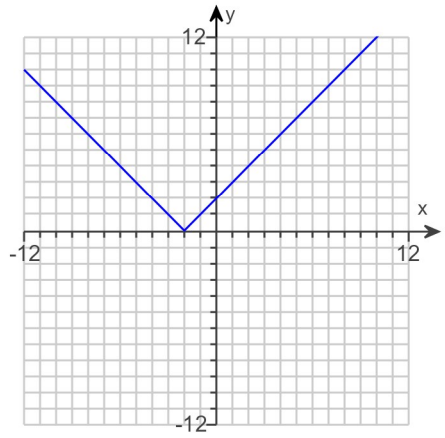
The graph of a function f is given. Use the horizontal-line test to determine whether f is one-to-one.



Is f one-to-one? Choose the correct answer below.

- [x] Yes
- [ ] No

8. Determine whether the graph of the function is the graph of a one-to-one function.



Is the function one-to-one?

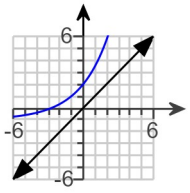
- [x] No
- [ ] Yes

9. If $f(x) = 4x - 3$, show that $f^{-1}(x) = \frac{x+3}{4}$.

Select the correct choice below and fill in the answer box(es) within your choice.

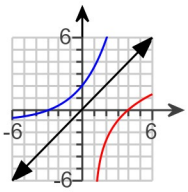
- [x] **A.** The inverse is $f^{-1}(x) = \frac{x+3}{4}$ because $\left(f^{-1} \circ f\right)(x) =$ x and $\left(f \circ f^{-1}\right)(x) =$ x.
- [ ] **B.** The inverse is $f^{-1}(x) = \frac{x+3}{4}$ because $\frac{1}{f(x)} =$ _____.
- [ ] **C.** The inverse is not $f^{-1}(x) = \frac{x+3}{4}$.

10. The graph of a one-to-one function is shown to the right. Draw the graph of the inverse function f^{-1}.

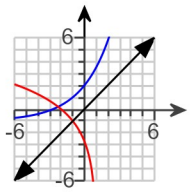


Choose the correct graph of the inverse function f^{-1} below.

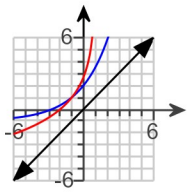
- [ ] **A.**



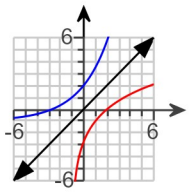
- [ ] **B.**



- [ ] **C.**



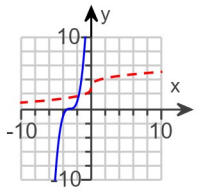
- [x] **D.**



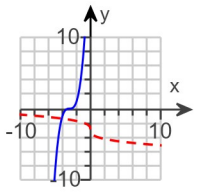
11. Graph the inverse of the one-to-one function f.

Choose the correct graph that shows the inverse as a red, dashed curve. The graph of f is shown as a blue, solid curve.

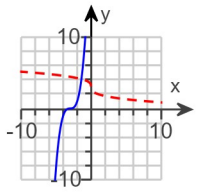
A.



B.



C.



D.