

Practice with Inverses

Solve the following problems dealing with inverses.

1. Is $\{(2,5), (7,3)\}$ the inverse relation of the function $\{(5,2), (3,7)\}$?



Choose:

- Yes
 No

Explanation

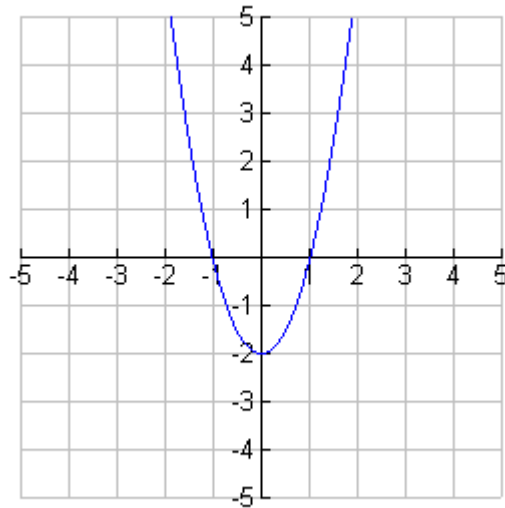
2. Given function f , is the inverse also a *function*?
 $f(x) = \{(6,8), (2,-4), (10,-2), (4,4)\}$

Choose:

- Yes
 No

Explanation

3. **True or False:** The inverse of the graph shown below will **Choose:**
be a function.

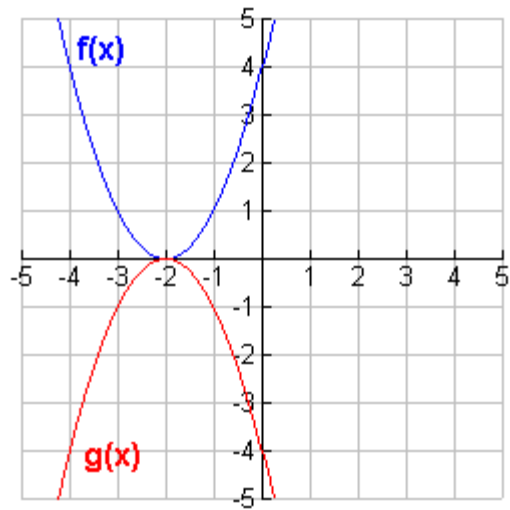


- True
 False
-

Explanation

4. **True or False:** Since $f(x)$ is a reflection of $g(x)$, $g(x)$ is also **Choose:**
the inverse of $f(x)$.

- True
 False
-

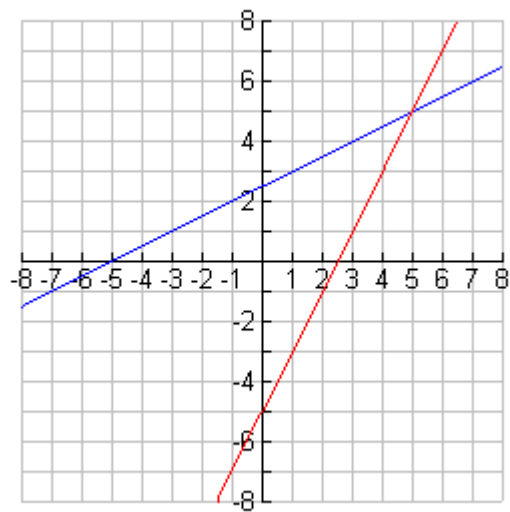


Explanation

5. **True or False:** The straight line graphs shown below are inverses of one another.

Choose:

- True
 False



Explanation

6.

Find $(f \circ f^{-1})(5)$

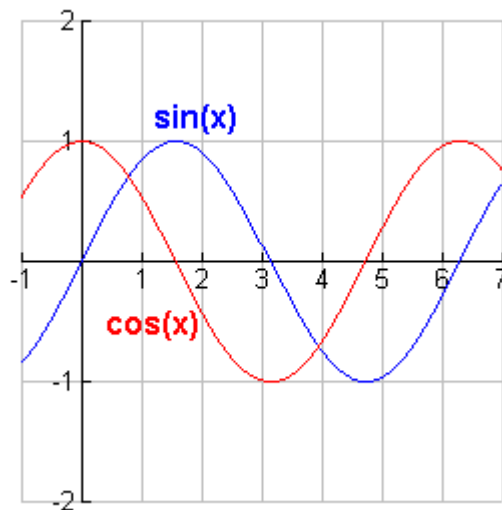


Choose:

- 0
- 5
- cannot be determined

Explanation

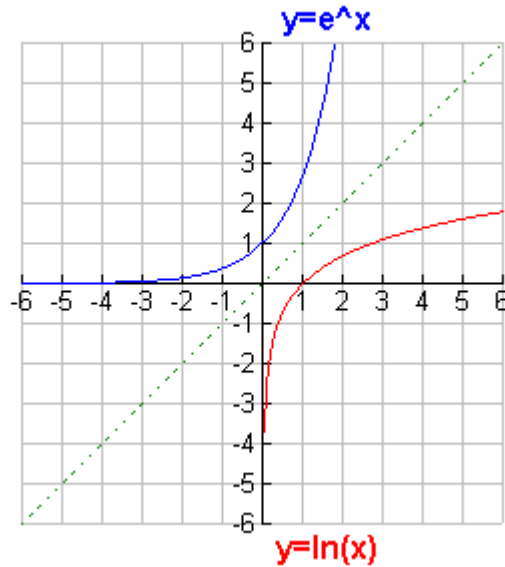
7. **True or False:** The graphs of $\sin(x)$ and $\cos(x)$ are inverses of one another. **Choose:**



- True
- False

8. The natural logarithmic function is the inverse function of the exponential function. Since the point (0,1) lies on the exponential function, we know that the point _____ lies on the logarithmic function.

- Choose:
- (0,1)
 - (1,1)
 - (1,0)



Explanation

9.

Find the inverse for the function $y = 4x + 12$.



Choose:

- $y = \frac{x}{4} + 3$
- $y = -\frac{x}{4} + 3$
- $y = \frac{x}{4} - 3$

10.

Find the inverse for the
function

$$y = (x + 2)^3$$



Choose:

- $y = \sqrt[3]{x-2}$
- $y = \sqrt[3]{x} - 2$
- $y = \sqrt[3]{x+2}$

Explanation

11.

Find the inverse for the
function

$$y = \frac{x+3}{x}$$

(where x is not zero).



Choose:

- $y = \frac{x-3}{x}$
- $y = \frac{3}{x+1}$
- $y = \frac{3}{x-1}$

Explanation

12.

Using composition of functions, show that

$$f(x) = 2x - 3 \quad \text{and} \quad g(x) = 0.5x + 1.5$$

are inverse functions.



Answer

