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Algebra II

## ***Finding the Inverse of a Function***

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

- (1)  $y = \frac{x+3}{2}$       (3)  $y = -2x + 3$   
(2)  $y = \frac{x}{2} + 3$       (4)  $y = \frac{1}{2x-3}$

2. If a function is defined by the equation  $y = 3x + 2$ , which equation defines the inverse of this function?

- (1)  $x = \frac{1}{3}y + \frac{1}{2}$       (3)  $y = \frac{1}{3}x - \frac{2}{3}$   
(2)  $y = \frac{1}{3}x + \frac{1}{2}$       (4)  $y = -3x - 2$

3. If  $f(x) = 5x - 7$ , find  $f^{-1}(x)$

4. What is  $g^{-1}(x)$  if  $g(x) = 3x + 6$

5. What is the inverse of  $y = \frac{1}{2}x + 2$ ?

6. If  $f(x) = x^2$ , find  $f^{-1}(x)$

7. What is  $h^{-1}(x)$  if  $h(x) = x^2 + 2$

8. What is the inverse of the function  $y = 4x + 5$ ?

1)  $x = \frac{1}{4}y - \frac{5}{4}$

3)  $y = 4x - 5$

2)  $y = \frac{1}{4}x - \frac{5}{4}$

4)  $y = \frac{1}{4x+5}$

9. What is the inverse of  $f(x) = -6(x - 2)$ ?

1)  $f^{-1}(x) = -2 - \frac{x}{6}$

3)  $f^{-1}(x) = \frac{1}{-6(x - 2)}$

2)  $f^{-1}(x) = 2 - \frac{x}{6}$

4)  $f^{-1}(x) = 6(x + 2)$

10. Given  $f(x) = \frac{1}{2}x + 8$ , which equation represents the inverse,  $g(x)$ ?

1)  $g(x) = 2x - 8$

3)  $g(x) = -\frac{1}{2}x + 8$

2)  $g(x) = 2x - 16$

4)  $g(x) = -\frac{1}{2}x - 16$

11. The inverse of  $f(x) = -6x + \frac{1}{2}$  is

1)  $f^{-1}(x) = 6x - \frac{1}{2}$

3)  $f^{-1}(x) = -\frac{1}{6}x + \frac{1}{12}$

2)  $f^{-1}(x) = \frac{1}{-6x + \frac{1}{2}}$

4)  $f^{-1}(x) = -\frac{1}{6}x + 2$

12. The inverse of the function  $f(x) = \frac{x+1}{x-2}$  is

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

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

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

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

13. What is the inverse of  $f(x) = \frac{x}{x+2}$ , where  $x \neq -2$ ?

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

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

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

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

14. What is the inverse of  $f(x) = x^3 - 2$ ?

1)  $f^{-1}(x) = \sqrt[3]{x} + 2$

3)  $f^{-1}(x) = \sqrt[3]{x+2}$

2)  $f^{-1}(x) = \pm\sqrt[3]{x} + 2$

4)  $f^{-1}(x) = \pm\sqrt[3]{x+2}$