Algebra: Finding the Inverse of a Function

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Name: _____ Date: _____ Score: / 10

DIRECTIONS *Find f■¹(x): swap x and y, then solve for y. Simplify completely.*

1 Find the inverse function f■¹(x):

$$f(x) = \frac{x+3}{5}$$

Answer: _____

2 Find the inverse function f■¹(x):

$$f(x) = 5x + 1$$

Answer: _____

3 Find the inverse function f■¹(x):

$$f(x) = x^3$$

Answer: _____

4 Find the inverse function f■¹(x):

$$f(x) = 2x + 6$$

Answer: _____

5 Find the inverse function f■¹(x):

$$f(x) = 3x - 9$$

Answer: _____

6 Find the inverse function f■¹(x):

$$f(x) = 2x - 10$$

Answer: _____

7 Find the inverse function f■¹(x):

$$f(x) = \frac{x}{4} + 2$$

Answer: _____

8 Find the inverse function f■¹(x):

$$f(x) = \sqrt{x-1}$$

Answer: _____

9 Find the inverse function f■¹(x):

$$f(x) = \frac{2}{x}$$

Answer: _____

10 Find the inverse function f■¹(x):

$$f(x) = 4x - 7$$

Answer: _____

Answer Key & Solutions

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TEACHER NOTES *Verify with (f■f■¹)(x)=x. Restrict domain for non-one-to-one functions like square roots.*

1 Find the inverse function f■¹(x):

= $f^{-1}(x) = 5x - 3$

$f(x) = \frac{x+3}{5}$

2 Find the inverse function f■¹(x):

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

$f(x) = 5x + 1$

3 Find the inverse function f■¹(x):

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

$f(x) = x^3$

4 Find the inverse function f■¹(x):

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

$f(x) = 2x + 6$

5 Find the inverse function f■¹(x):

= $f^{-1}(x) = \frac{x+9}{3}$

$f(x) = 3x - 9$

6 Find the inverse function f■¹(x):

= $f^{-1}(x) = \frac{x+10}{2}$

$f(x) = 2x - 10$

7 Find the inverse function f■¹(x):

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

$f(x) = \frac{x}{4} + 2$

8 Find the inverse function f■¹(x):

= $f^{-1}(x) = x^2 + 1,\ x \geq 0$

$f(x) = \sqrt{x-1}$

9 Find the inverse function f■¹(x):

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

$f(x) = \frac{2}{x}$

10 Find the inverse function f■¹(x):

= $f^{-1}(x) = \frac{x+7}{4}$

$f(x) = 4x - 7$