Name : _____ Score : _____

Teacher : _____ Date : _____

Derivatives of Inverse Functions with Formulas

Find $f^{-1}'(x)$, using the formula, $f^{-1}'(x) = \frac{1}{dx/dy}$, where $y = f^{-1}(x)$.

1) $f(x) = x^2 - 16$

2) $f(x) = x^2 + 4x - 21$

3) $f(x) = x^2 - 10x + 24$

4) $f(x) = x^3 + x^2 - 6x$

5) $f(x) = x^3 - 12x^2 + 39x - 28$

6) $f(x) = x^2 - 1$

7) $f(x) = x^2 + 4x - 12$

8) $f(x) = x^3 - 9x^2 + 20x - 12$

9) $f(x) = -x^3 + 9x^2 - 8x - 60$

10) $f(x) = x^3 + x^2 - 16x + 20$

11) $f(x) = x^2 - x - 30$

12) $f(x) = x^3 - 18x^2 + 107x - 210$

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Derivatives of Inverse Functions with Formulas

Find $f^{-1}'(x)$, using the formula, $f^{-1}'(x) = \frac{1}{dx/dy}$, where $y = f^{-1}(x)$.

13) $f(x) = x^2 + x$

14) $f(x) = -x^3 - 3x^2 + 25x - 21$

15) $f(x) = x^2 - 6x$

16) $f(x) = x^3 + 2x^2 - 3x$

17) $f(x) = -x^3 + 5x^2 + 18x - 72$

18) $f(x) = x^3 - x^2 - x + 1$

19) $f(x) = x^3 - 10x^2 + 33x - 36$

20) $f(x) = x^2 + 2x - 24$

21) $f(x) = x^2 + 2x$

22) $f(x) = x^2 + 5x - 6$

23) $f(x) = x^2 - 7x + 6$

24) $f(x) = x^3 + 3x^2 - 18x$

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Derivatives of Inverse Functions with Formulas

Find $f^{-1}'(x)$, using the formula, $f^{-1}'(x) = \frac{1}{dx/dy}$, where $y = f^{-1}(x)$.

1) $f(x) = x^2 - 16$

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

2) $f(x) = x^2 + 4x - 21$

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

3) $f(x) = x^2 - 10x + 24$

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

4) $f(x) = x^3 + x^2 - 6x$

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

5) $f(x) = x^3 - 12x^2 + 39x - 28$

$f^{-1}'(x) = \frac{1}{3y^2 - 24y + 39}$

6) $f(x) = x^2 - 1$

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

7) $f(x) = x^2 + 4x - 12$

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

8) $f(x) = x^3 - 9x^2 + 20x - 12$

$f^{-1}'(x) = \frac{1}{3y^2 - 18y + 20}$

9) $f(x) = -x^3 + 9x^2 - 8x - 60$

$f^{-1}'(x) = \frac{1}{-3y^2 + 18y - 8}$

10) $f(x) = x^3 + x^2 - 16x + 20$

$f^{-1}'(x) = \frac{1}{3y^2 + 2y - 16}$

11) $f(x) = x^2 - x - 30$

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

12) $f(x) = x^3 - 18x^2 + 107x - 210$

$f^{-1}'(x) = \frac{1}{3y^2 - 36y + 107}$

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Derivatives of Inverse Functions with Formulas

Find $f^{-1}'(x)$, using the formula, $f^{-1}'(x) = \frac{1}{dx/dy}$, where $y = f^{-1}(x)$.

13) $f(x) = x^2 + x$

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

14) $f(x) = -x^3 - 3x^2 + 25x - 21$

$f^{-1}'(x) = \frac{1}{-3y^2 - 6y + 25}$

15) $f(x) = x^2 - 6x$

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

16) $f(x) = x^3 + 2x^2 - 3x$

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

17) $f(x) = -x^3 + 5x^2 + 18x - 72$

$f^{-1}'(x) = \frac{1}{-3y^2 + 10y + 18}$

18) $f(x) = x^3 - x^2 - x + 1$

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

19) $f(x) = x^3 - 10x^2 + 33x - 36$

$f^{-1}'(x) = \frac{1}{3y^2 - 20y + 33}$

20) $f(x) = x^2 + 2x - 24$

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

21) $f(x) = x^2 + 2x$

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

22) $f(x) = x^2 + 5x - 6$

$f^{-1}'(x) = \frac{1}{2y + 5}$

23) $f(x) = x^2 - 7x + 6$

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

24) $f(x) = x^3 + 3x^2 - 18x$

$f^{-1}'(x) = \frac{1}{3y^2 + 6y - 18}$