

3.4 The Chain Rule

Name:

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P 8. Find the derivative.

$$y = 5(2 - x^3)^4$$

P 10. Find the derivative.

$$f(t) = (9t + 2)^{2/3}$$

P 16. Find the derivative.

$$f(x) = \sqrt[3]{12x - 5}$$

P 30. Find the derivative.

$$h(t) = \left(\frac{t^2}{t^3 + 2} \right)^2$$

P 34. Find the derivative.

$$g(x) = (2 + (x^2 + 1)^4)^3$$

P 48. Find the derivative.

$$y = \sin \pi x$$

P 52. Find the derivative.

$$y = \cos(1 - 2x)^2$$

P 54. Find the derivative.

$$g(\theta) = \sec\left(\frac{1}{2}\theta\right) \tan\left(\frac{1}{2}\theta\right)$$

P 68. Find the derivative.

$$y = \cos \sqrt{\sin(\tan(\pi x))}$$

P 86. Find the derivative.

$$h(x) = \ln(2x^2 + 3)$$

P 90. Find the derivative.

$$y = \ln \sqrt{x^2 - 9}$$

P 98. Find the derivative.

$$y = \frac{-\sqrt{x^2 + 4}}{2x^2} - \frac{1}{4} \ln \left(\frac{2 + \sqrt{x^2 + 4}}{x} \right)$$

P 111. Find the derivative of $y = 26 - \sec^3 4x$ at the point $(0, 25)$.

P 119. Find an equation for the tangent line to the graph of

$$y = 4 - x^2 - \ln\left(\frac{1}{2}x + 1\right)$$

at the point $(0, 4)$.

P 123. Determine the point(s) in the interval $(0, 2\pi)$ at which the graph of

$$f(x) = 2 \cos x + \sin 2x$$

has a horizontal tangent.

P 162. Let $g(5) = -3$, $g'(5) = 6$, $h(5) = 3$, $h'(5) = -2$, and $f(x) = [g(x)]^3$. Find $f'(5)$.