

Calculus I

Section 3.5B - Chain Rule

Find $\frac{dy}{dx}$ for each of the following.

1. $y = -3\csc^4(x^5)$

2. $y = \sin^2\left(\frac{x}{x-1}\right)$

3. $y = \sqrt{\tan 7x}$

4. $y = [x^4 - \sec(2x + 1)]^{-1}$

5. $y = \sec(x^3)$

6. $y = \frac{x}{\sqrt{2x+1}}$

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7. $y = \sqrt{x} \sin^3(5x)$

8. $y = \sin(\sin x)$

Find $\frac{d^2 y}{dx^2}$.

9. $y = \cos(2x^3)$

10. $y = x \cot x$