

Name : _____

Score : _____

Teacher : _____

Date : _____

Chain Rule with Trigonometry

Differentiate each function.

1) $f(x) = \cos(-2x^3 - 7x)$

2) $y = -\sqrt{(\tan(x))^5}$

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

4) $f(x) = \cos(5x + 3)$

5) $y = \frac{3}{2}(\tan(x))^4$

6) $y = \tan(4x - 6)$

7) $f(x) = -\frac{2}{3}\sqrt{(\sin(x))^5}$

8) $y = \sin(-3x - 6)$

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

10) $y = \sin(-5x - 5)$



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Chain Rule with Trigonometry

Differentiate each function.

1) $f(x) = \cos(-2x^3 - 7x)$

$$f'(x) = -\sin(-2x^3 - 7x) \cdot (-6x^2 - 7)$$

2) $y = -\sqrt{(\tan(x))^5}$

$$\frac{dy}{dx} = -\frac{5}{2} \sqrt{(\tan(x))^3} \cdot \sec^2(x)$$

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

$$f'(x) = \frac{9}{2} (\cos(x))^2 \cdot \sin(x)$$

4) $f(x) = \cos(5x + 3)$

$$f'(x) = -5\sin(5x + 3)$$

5) $y = \frac{3}{2} (\tan(x))^4$

$$\frac{dy}{dx} = 6(\tan(x))^3 \cdot \sec^2(x)$$

6) $y = \tan(4x - 6)$

$$\frac{dy}{dx} = 4\sec^2(4x - 6)$$

7) $f(x) = -\frac{2}{3} \sqrt{(\sin(x))^5}$

$$f'(x) = -\frac{5}{3} \sqrt{(\sin(x))^3} \cdot \cos(x)$$

8) $y = \sin(-3x - 6)$

$$\frac{dy}{dx} = -3\cos(-3x - 6)$$

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

$$f'(x) = 2(\cos(x))^3 \cdot \sin(x)$$

10) $y = \sin(-5x - 5)$

$$\frac{dy}{dx} = -5\cos(-5x - 5)$$

