



Derivative Rules - Trigonometric Angle with Radical to Derivative

1 Find the derivative $f'(x)$ using the trigonometric rules and the chain rule.

$$f(x) = \cos(3\sqrt{x})$$

A $f'(x) = \cos(3\sqrt{x}) \cdot \frac{3}{\sqrt{x}}$

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

C $f'(x) = -\sin(3\sqrt{x}) \cdot (3\sqrt{x})$

D $f'(x) = -\sin(3\sqrt{x})$

2 Find the derivative $f'(x)$ using the trigonometric rules and the chain rule.

$$f(x) = 2 \sin(3\sqrt[3]{x})$$

A $f'(x) = 2 \cos(3\sqrt[3]{x})$

B $f'(x) = 2 \cos(3\sqrt[3]{x}) \cdot \frac{1}{\sqrt{x^2}}$

C $f'(x) = 2 \cos(3\sqrt[3]{x}) \cdot (3\sqrt[3]{x})$

D $f'(x) = 2 \sin(3\sqrt[3]{x}) \cdot \frac{1}{\sqrt{x^2}}$

3 Find the derivative $f'(x)$ using the trigonometric rules and the chain rule.

$$f(x) = 3 \sin\left(\frac{3}{\sqrt[3]{x}}\right)$$

A $f'(x) = 3 \sin\left(\frac{3}{\sqrt[3]{x}}\right) \cdot \left(-\frac{1}{\sqrt[3]{x^4}}\right)$

B $f'(x) = 3 \cos\left(\frac{3}{\sqrt[3]{x}}\right) \cdot \left(-\frac{1}{\sqrt[3]{x^4}}\right)$

C $f'(x) = 3 \cos\left(\frac{3}{\sqrt[3]{x}}\right)$

D $f'(x) = 3 \cos\left(\frac{3}{\sqrt[3]{x}}\right) \cdot \left(\frac{3}{\sqrt[3]{x}}\right)$

4 Find the derivative $f'(x)$ using the trigonometric rules and the chain rule.

$$f(x) = 2 \cos(3\sqrt{x})$$

A $f'(x) = -2 \sin(3\sqrt{x})$

B $f'(x) = 2 \cos(3\sqrt{x}) \cdot \frac{3}{\sqrt{x}}$

C $f'(x) = -2 \sin(3\sqrt{x}) \cdot \frac{3}{\sqrt{x}}$

D $f'(x) = -2 \sin(3\sqrt{x}) \cdot (3\sqrt{x})$

5 Find the derivative $f'(x)$ using the trigonometric rules and the chain rule.

$$f(x) = 4 \cos\left(\frac{1}{\sqrt[3]{x}}\right)$$

A $f'(x) = -4 \sin\left(\frac{1}{\sqrt[3]{x}}\right)$

B $f'(x) = -4 \sin\left(\frac{1}{\sqrt[3]{x}}\right) \cdot \left(-\frac{1}{\sqrt[3]{x^4}}\right)$

C $f'(x) = 4 \cos\left(\frac{1}{\sqrt[3]{x}}\right) \cdot \left(-\frac{1}{\sqrt[3]{x^4}}\right)$

D $f'(x) = -4 \sin\left(\frac{1}{\sqrt[3]{x}}\right) \cdot \left(\frac{1}{\sqrt[3]{x}}\right)$

6 Find the derivative $f'(x)$ using the trigonometric rules and the chain rule.

$$f(x) = 4 \cos(2\sqrt{x})$$

A $f'(x) = -4 \sin(2\sqrt{x})$

B $f'(x) = -4 \sin(2\sqrt{x}) \cdot \frac{1}{\sqrt{x}}$

C $f'(x) = 4 \cos(2\sqrt{x}) \cdot \frac{1}{\sqrt{x}}$

D $f'(x) = -4 \sin(2\sqrt{x}) \cdot (2\sqrt{x})$

7 Find the derivative $f'(x)$ using the trigonometric rules and the chain rule.

$$f(x) = \sin\left(\frac{1}{\sqrt{x}}\right)$$

A $f'(x) = \cos\left(\frac{1}{\sqrt{x}}\right)$

B $f'(x) = \sin\left(\frac{1}{\sqrt{x}}\right) \cdot \left(-\frac{1}{\sqrt{x^3}}\right)$

C $f'(x) = \cos\left(\frac{1}{\sqrt{x}}\right) \cdot \left(-\frac{1}{\sqrt{x^3}}\right)$

D $f'(x) = \cos\left(\frac{1}{\sqrt{x}}\right) \cdot \left(\frac{1}{\sqrt{x}}\right)$

8 Find the derivative $f'(x)$ using the trigonometric rules and the chain rule.

$$f(x) = 5 \sin\left(\frac{3}{\sqrt[3]{x}}\right)$$

A $f'(x) = 5 \cos\left(\frac{3}{\sqrt[3]{x}}\right) \cdot \left(\frac{3}{\sqrt[3]{x}}\right)$

B $f'(x) = 5 \sin\left(\frac{3}{\sqrt[3]{x}}\right) \cdot \left(-\frac{1}{\sqrt[3]{x^4}}\right)$

C $f'(x) = 5 \cos\left(\frac{3}{\sqrt[3]{x}}\right)$

D $f'(x) = 5 \cos\left(\frac{3}{\sqrt[3]{x}}\right) \cdot \left(-\frac{1}{\sqrt[3]{x^4}}\right)$