2.3A Product and Quotient Rules (2053855)

Question   1   2   3   4   5   6   7   8   9   10   11   12

1.   Question Details   LarCalc9 2.3.002. [1047595]

Use the Product Rule to differentiate the function.

$$f(x) = (7x + 4)(x^3 - 6)$$

$f'(x) =$ $\boxed{28x^3 + 12x^2 - 42}$

2.   Question Details   LarCalc9 2.3.005.MI. [1267208]

Use the Product Rule to differentiate the function.

$$f(x) = x^3 \cos(x)$$

$f'(x) =$ $\boxed{3x^2 \cos(x) - x^3 \sin(x)}$

3.   Question Details   LarCalc9 2.3.005.MI.SA. [1419817]

This question has several parts that must be completed sequentially. If you skip a part of the question, you will not receive any points for the skipped part, and you will not be able to come back to the skipped part.

Tutorial Exercise

Use the Product Rule to differentiate the function.

$$f(x) = x^4 \cos(x)$$

4.   Question Details   LarCalc9 2.3.007. [1196560]

Use the Quotient Rule to differentiate the function.

$$f(x) = \frac{x}{x^7 + 4}$$

$f'(x) =$ $\boxed{\dfrac{4 - 6 \cdot x^7}{(x^7 + 4)^2}}$

5.   Question Details   LarCalc9 2.3.012.MI. [1525648]

Use the Quotient Rule to differentiate the function.

$$f(t) = \frac{\cos(t)}{t^3}$$

$f'(t) =$ $\boxed{-\dfrac{t \sin(t) + 3 \cos(t)}{t^4}}$

6. Question Details   LarCalc9 2.3.013. [1048980]

Find $f'(x)$ and $f'(c)$.

$$f(x) = (x^4 + 5x)(5x^4 + 4x - 5), \quad c = 0$$

$f'(x) = \boxed{(4 \cdot x^3 + 5) \cdot (5 \cdot x^4 + 4 \cdot x - 5) + (x^4 + 5 \cdot x) \cdot (20 \cdot x^3 + 4)}$

$f'(c) = \boxed{}$ 🔑 -25

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7. Question Details   LarCalc9 2.3.016. [1047658]

Find $f'(x)$ and $f'(c)$.

$$f(x) = \frac{x + 3}{x - 1}, \quad c = 6$$

$f'(x) = \boxed{-\dfrac{4}{(x - 1)^2}}$

$f'(6) = \boxed{}$ 🔑 -4/25

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8. Question Details   LarCalc9 2.3.021.MI. [1267213]

Find the derivative of the function without using the Quotient Rule.

$$y = \frac{7}{4x^3}$$

$y' = \boxed{-\dfrac{21}{4x^4}}$

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9. Question Details   LarCalc9 2.3.023. [1197231]

Complete the table without using the Quotient Rule.

Function $y = \dfrac{8x^{7/2}}{x}$

Rewrite $y = \boxed{8 \cdot x^{\frac{5}{2}}}$

Differentiate $y' = \boxed{20 \cdot x^{\frac{3}{2}}}$

Simplify $y' = \boxed{20 \cdot x^{\frac{3}{2}}}$

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10. Question Details   LarCalc9 2.3.025. [1197123]

Find the derivative of the algebraic function.

$$f(x) = \frac{1 - 5x - x^4}{x^5 - 1}$$

$f'(x) = \boxed{\dfrac{(x^5 - 1) \cdot (-5 - 4 \cdot x^3) - 5 \cdot (1 - 5 \cdot x - x^4) \cdot x^4}{(x^5 - 1)^2}}$

11.   Question Details   LarCalc9 2.3.026. [1197751]

Find the derivative of the algebraic function.

$$f(x) = \frac{x^3 + 5x + 9}{x^2 - 8}$$

$f'(x) =$

$$\frac{x^4 - 29 \cdot x^2 - 40 - 18 \cdot x}{(x^2 - 8)^2}$$

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12.   Question Details   LarCalc9 2.3.028. [1048968]

Find the derivative of the algebraic function.

$$f(x) = x^7 \left[1 - \frac{6}{x + 7} \right]$$

$f'(x) =$

$$x^6 \cdot \frac{7x^2 + 62x + 49}{(x + 7)^2}$$

Assignment Details

Name (AID): **2.3A Product and Quotient Rules (2053855)**

Submissions Allowed: **5**

Category: **Homework**

Code:

Locked: **Yes**

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