

2.4 A Chain Rule (2849184)

Question

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

1. Question Details

LarCalc9 2.4.001. [1196899]

Complete the table.

$y = f(g(x))$	$u = g(x)$	$y = f(u)$
$y = (7x - 3)^2$	$u =$	$y =$

2. Question Details

LarCalc9 2.4.008.MI. [1267194]

Find the derivative of the function.

$$y = 8(5 - x^2)^3$$

 $y'(x) =$

3. Question Details

LarCalc9 2.4.009. [2233587]

Find the derivative of the function.

$$g(x) = 4(5 - 9x)^5$$

 $g'(x) =$

4. Question Details

LarCalc9 2.4.010. [1197478]

Find the derivative of the function.

$$f(t) = (3t + 16)^{2/3}$$

 $f'(t) =$

5. Question Details

LarCalc9 2.4.011. [1196763]

Find the derivative of the function.

$$f(t) = \sqrt{5 - 3t}$$

 $f'(t) =$

6. Question Details

LarCalc9 2.4.014. [1197180]

Find the derivative of the function.

$$g(x) = \sqrt{x^2 - 6x + 9}$$

$$g'(x) = \begin{cases} & , x > \boxed{} \\ & , x < \boxed{} \end{cases}$$

7. Question Details

LarCalc9 2.4.017. [1196692]

Find the derivative of the function.

$$y = \frac{4}{x - 2}$$

$$y'(x) =$$

8. Question Details

LarCalc9 2.4.020. [1047599]

Find the derivative of the function.

$$y = -\frac{7}{(t + 6)^7}$$

$$y'(t) =$$

9. Question Details

LarCalc9 2.4.021. [1196591]

Find the derivative of the function.

$$y = \frac{5}{\sqrt{x + 9}}$$

$$y' =$$

10. Question Details

LarCalc9 2.4.024. [1197122]

Find the derivative of the function.

$$f(x) = x(4x - 12)^3$$

$$f'(x) =$$

11. Question Details

LarCalc9 2.4.027. [1196643]

Find the derivative of the function.

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

$$y'(x) =$$

12. Question Details

LarCalc9 2.4.030.MI. [1385048]

Find the derivative of the function.

$$h(t) = \left(\frac{t^3}{t^6 + 9} \right)^2$$

$$h'(t) =$$

13. Question Details

LarCalc9 2.4.035. [1197084]

Find the derivative of the function.

$$f(x) = \sqrt{5 + \sqrt{1 + \sqrt{x}}}$$

$$f'(x) =$$

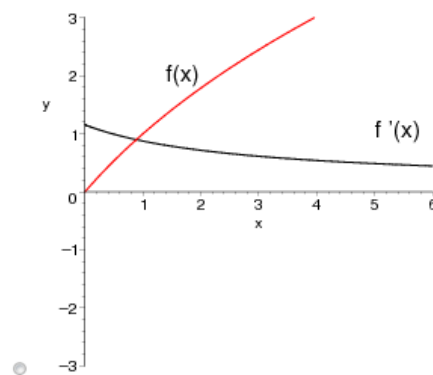
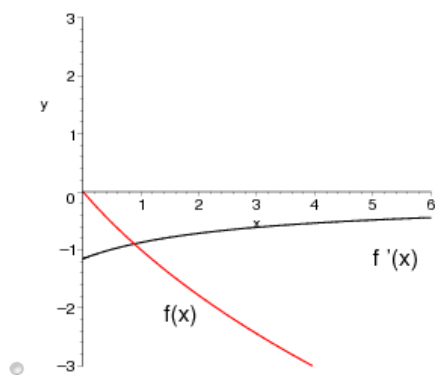
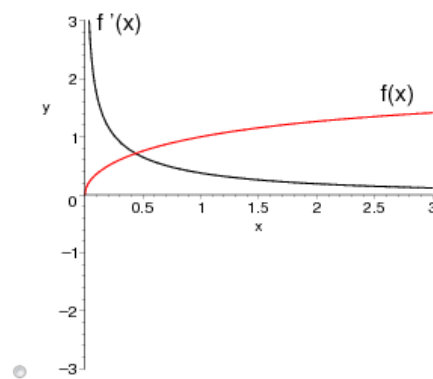
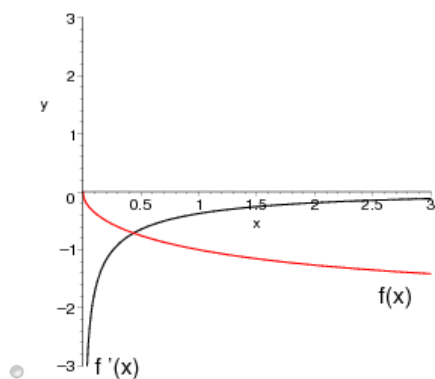
14. Question Details

LarCalc9 2.4.038. [1048008]

Consider the following.

$$f(x) = \sqrt{\frac{4x}{x+3}}$$

Use a computer algebra system to find the derivative of the function. Then use the utility to graph the function and its derivative on the same set of coordinate axes.



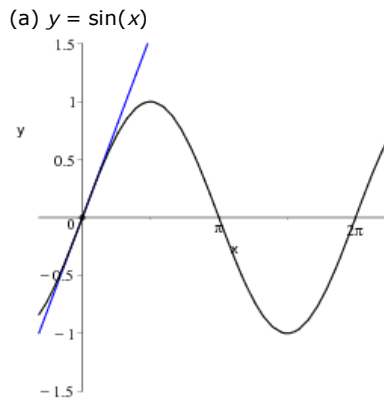
Describe the behavior of the function when the derivative is zero.

- f approaches $\sqrt{2}$ when f' is zero.
- f' is never zero.
- f approaches $-\sqrt{2}$ when f' is zero.
- f approaches ∞ when f' is zero.

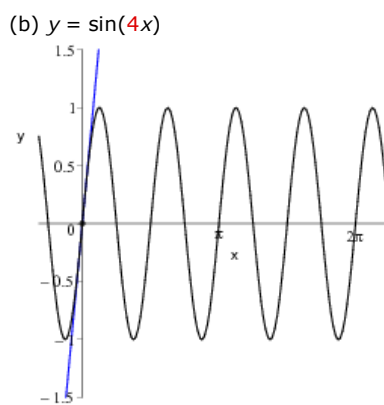
15. Question Details

LarCalc9 2.4.043. [1197501]

Find the slope of the tangent line to the sine function at the origin.



$$y'(0) = \boxed{}$$



$$y'(0) = \boxed{}$$

Compare these values with the number of complete cycles in the interval $[0, 2\pi]$. What can you conclude about the slope of the sine function $\sin(ax)$ at the origin?

The slope of $\sin(ax)$ at the origin is _____.

16. Question Details

LarCalc9 2.4.045. [1197678]

Find the derivative of the function.

$$y = \cos(8x)$$

$$y' =$$

Assignment Details

Name (AID): **2.4 A Chain Rule (2849184)**

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