CENGAGE | WEBASSIGN

HW6 - powers, exp, products, trig, chain rule (Homev

Due Date: WED, OCT 14, 2026 9:00 AM EDT

Current Score: – / 33 POINTS | 0.0 %

Scoring and Assignment Information

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
POINTS	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1	– / 1

Assignment Submission

For this assignment, you submit answers by question parts. The number of submissions remainin

Assignment Scoring

Your last submission is used for your score.

1. [– / 1 Points]

SCalcCC5 3.1.006.

Differentiate the function.

$$f(x) = \frac{3}{4}x^2 - 5x + 14$$

$f'(x) =$

2. [– / 1 Points]

SCalcCC5 3.1.012.

Differentiate the function.

$$B(y) = cy^{-2}$$

$B'(y) =$

3. [– / 1 Points]

SCalcCC5 3.1.016.

Differentiate the function.

$$h(t) = \sqrt[9]{t} - 9e^t$$

$h'(t) =$

4. [– / 1 Points]

SCalcCC5 3.1.032.MI.

Differentiate the function.

$$y = e^{x+4} + 7$$

$y' =$

5. [– / 1 Points]

SCalcCC5 3.1.033.

Find an equation of the tangent line to the curve at the given point.

$$y = 3x^3 - x^2 + 1, \ (2, 21)$$

$y =$

---

6. [– / 1 Points]

Find the first and second derivatives of the function. Check to see that your answers are reasonable by co

$$f(x) = 4x - 5x^{7/8}$$

$f'(x) =$

$f''(x) =$

---

7. [– / 1 Points]

SCalcCC5 3.2.004.

Differentiate the function.

$$f(x) = (8x^2 - 17x)e^x$$

$f'(x) =$

---

8. [– / 1 Points]

SCalcCC5 3.2.003.

Let $h(x) = \dfrac{x^2}{x - 1}$.

(a) Find the derivative using the Quotient Rule.

$h'(x) =$

(b) Rewrite $h(x)$ using negative exponents and find the derivative using the Product Rule.

$h'(x) =$

9. [– / 1 Points]

SCalcCC5 3.2.006.

Differentiate the function.

$$y = \frac{3x}{e^x}$$

$y' =$

10. [– / 1 Points]

SCalcCC5 3.2.013.

Differentiate.

$$f(z) = (8 - e^z)(8z + e^z)$$

$f'(z) =$

11. [– / 1 Points]

SCalcCC5 3.2.026.

Differentiate the function.

$$f(x) = \frac{x}{x + \frac{c}{x}}$$

$f'(x) =$

12. [– / 1 Points]

SCalcCC5 3.2.031.

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

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

$f'(x)$ =

$f''(x)$ =

13. [– / 1 Points]

SCalcCC5 3.2.033.EP.

Consider the following curve.

$$y = \frac{1 + x}{6 + e^x}$$

Find $y'(x)$.

$y'(x)$ =

Find an equation of the tangent line to the given curve at the point $\left(0, \frac{1}{7}\right)$.

y =

14. [– / 1 Points]

SCalcCC5 3.2.053.

If $h(2) = 6$ and $h'(2) = -2$, find

$$\frac{d}{dx}\left(\frac{h(x)}{x}\right)\Big|_{x = 2}.$$

15. [– / 1 Points]

SCalcCC5 3.2.056.

If $f(4) = 12$ and $f'(x) = x^2 f(x)$ for all x, find $f''(4)$.

$f''(4)$ =

16. [– / 1 Points]

SCalcCC5 3.3.001.

Find the derivative of the function.

$$f(x) = x^2 \sin(x)$$

$f'(x) =$ [ ]

17. [– / 1 Points]

SCalcCC5 3.3.009.MI.

Differentiate.

$$y = \frac{2x}{3 - \tan(x)}$$

$y' =$ [ ]

18. [– / 1 Points]

SCalcCC5 3.3.018.

Find the derivative of the function.

$$f(x) = 3x \cos(x) - 4 \sin(x)$$

$f'(x) =$ [ ]

19. [– / 1 Points]

SCalcCC5 3.3.024.

Find an equation of the tangent line to the graph of the given function at the specified point.

$$f(x) = 9e^x \cos(x), \quad (0, 9)$$

$y =$ [ ]

20. **[– / 1 Points]**

SCalcCC5 3.3.032.

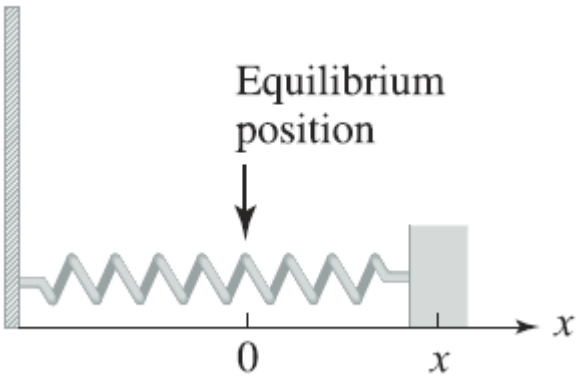
Let $g(x) = x \sin(x)$. Find $g'(x)$ and $g''(x)$.

$g'(x)$ =

$g''(x)$ =

21. **[– / 1 Points]**

A mass on a spring vibrates horizontally on a smooth, level surface as shown in the figure. Its equation o



(a) Find the velocity and acceleration at time t.

$v(t)$ =

$a(t)$ =

(b) Find the position, velocity, and acceleration of the mass at time $t = 2\pi/3$.

$x\left(\frac{2\pi}{3}\right)$ =

$v\left(\frac{2\pi}{3}\right)$ =

$a\left(\frac{2\pi}{3}\right)$ =

In what direction is the mass moving at that time?

In what direction is the mass moving at that time?

Since $v\left(\frac{2\pi}{3}\right)$? 0, the mass is moving to the ---Select--- .

22. [– / 1 Points]

SCalcCC5 3.3.047.

Find the given derivative by finding the first few derivatives and observing the pattern that occurs.

$$\frac{d^{39}}{dx^{39}}\,(x\sin(x))$$

23. [– / 1 Points]

SCalcCC5 3.3.502.XP.MI.

Differentiate the following function.

$$y = 5\csc(x) + 7\cos(x)$$

$y' =$

24. [– / 1 Points]

For the given composite function, identify the inner function, $u = g(x)$, and the outer function, $y = f(u)$. (

$$y = \sqrt[3]{1 + 8x}$$

$(f(u), g(x)) =$ ( )

Find the derivative $\frac{dy}{dx}$.

$\frac{dy}{dx} =$

25. **[– / 1 Points]**

SCalcCC5 3.4.007.

Find the derivative of the function.

$$F(x) = (3x^6 + 2x^3)^4$$

$F'(x) =$ [ ]

26. **[– / 1 Points]**

SCalcCC5 3.4.010.

Find the derivative of the function.

$$f(x) = \frac{1}{\sqrt[3]{2x^2 - 5}}$$

$f'(x) =$ [ ]

27. **[– / 1 Points]**

SCalcCC5 3.4.014.MI.

Find the derivative of the function.

$$f(t) = 3t \sin(\pi t)$$

$f'(t) =$ [ ]

28. **[– / 1 Points]**

SCalcCC5 3.4.016.

Find the derivative of the function.

$$g(x) = e^{x^6 - 7x}$$

$g'(x) =$ [ ]

29. **[– / 1 Points]**

SCalcCC5 3.4.024.

Find the derivative of the function.

$$f(t) = 5^{t^3}$$

$f'(t) =$ [ ]

30. **[– / 1 Points]**

SCalcCC5 3.4.031.

Find the derivative of the function.

$$F(t) = e^{4t\sin(2t)}$$

$F'(t) =$ [ ]

31. **[– / 1 Points]**

SCalcCC5 3.4.039.

Find the derivative of the function.

$$f(t) = \tan(\sec(\cos(t)))$$

$f'(t) =$ [ ]

32. **[– / 1 Points]**

SCalcCC5 3.4.050.

Find y' and y''.

$$y = e^{4e^x}$$

$y' =$ [ ]

$y'' =$ [ ]

33. [– / 1 Points]

SCalcCC5 3.4.052.

Find an equation of the tangent line to the curve at the given point.

$$y = \sqrt{2 + x^3}, \quad (-1, 1)$$

Home My Assignm

Copyright © 1998 - 2026 Cengage Learning,