Due: Wed Sep 17 2014 11:59 PM EDT

Question 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

1. Question Details SCalcET6 3.1.003. [632330]

Differentiate the following function.

$f(x) = 186.3$

$f'(x) =$ [ ] 0

2. Question Details SCalcET6 3.1.006. [1816332]

Differentiate the function.

$F(x) = \frac{3}{5}x^{15}$

$F'(x) =$ $9x^{14}$

3. Question Details SCalcET6 3.1.007. [1816348]

Differentiate the function.

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

$f'(x) =$ $4x^3 - 7$

4. Question Details SCalcET6 3.1.008. [1817066]

Differentiate the following function.

$f(t) = \frac{1}{7}t^6 - 5t^4 + 5t$

$f'(t) =$ $\frac{6}{7}t^5 - 20t^3 + 5$

5. Question Details SCalcET6 3.1.009. [1816172]

Differentiate the following function.

$f(t) = \frac{5}{9}\left(t^9 + 3\right)$

$f'(t) =$ $5t^8$

6. Question Details SCalcET6 3.1.01.XP. [1817007]

Differentiate the following function.

$F(x) = \dfrac{\sqrt{6}}{x^5}$

$F'(x) =$ $\boxed{\dfrac{-5\sqrt{6}}{x^6}}$

7. Question Details SCalcET6 3.1.010. [1816762]

Differentiate the function.

$h(x) = (x - 3)(4x + 11)$

$h'(x) =$ $\boxed{8x - 1}$

8. Question Details SCalcET6 3.1.011. [1816291]

Differentiate the following function.

$y = x^{-2/3}$

$y' =$ $\boxed{-\dfrac{2}{3}x^{-\frac{5}{3}}}$

9. Question Details SCalcET6 3.1.012. [1817396]

Differentiate the following function.

$y = 5e^x + 3$

$y' =$ $\boxed{5e^x}$

10. Question Details SCalcET6 3.1.014. [1816497]

Differentiate the following function.

$R(t) = 7t^{-6/7}$

$R'(t) =$ $\boxed{-6t^{-\frac{13}{7}}}$

11. Question Details SCalcET6 3.1.015. [1817312]

Differentiate the function.

$A(s) = -\dfrac{11}{s^4}$

$A'(s) =$ $\boxed{\dfrac{44}{s^5}}$

12. Question Details SCalcET6 3.1.017. [1816705]

Differentiate the following function.

$G(x) = 7\sqrt{x} - 4e^x$

$G'(x) =$ $\frac{7}{2\sqrt{x}} - 4e^x$

13. Question Details SCalcET6 3.1.018. [1816098]

Differentiate the following function.

$y = \sqrt[4]{x}$

$y' =$ $\frac{1}{4x^{\frac{3}{4}}}$

14. Question Details SCalcET6 3.1.019. [1817082]

Differentiate the following function.

$F(x) = \left(\frac{4}{5}x\right)^3$

$F'(x) =$ $\frac{192}{125}x^2$

15. Question Details SCalcET6 3.1.02.XP. [1817351]

Differentiate the following function.

$u = \sqrt[3]{t^2} + 4\sqrt{t^7}$

$u'(t) =$ $\frac{2}{3}t^{-\frac{1}{3}} + 14t^{\frac{5}{2}}$

16. Question Details SCalcET6 3.1.022. [1816199]

Differentiate the function.

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

$y' =$ $\frac{3x - 2}{2\sqrt{x}}$

17. Question Details SCalcET6 3.1.023.MI. [1816315]

Differentiate the function.

$y = \frac{2x^2 + 6x + 8}{\sqrt{x}}$

$y' =$ $3\sqrt{x} + \frac{3}{\sqrt{x}} - \frac{4}{x\sqrt{x}}$

18. Question Details SCalcET6 3.1.024. [1816888]

Differentiate the following function.

$$y = \frac{9x^2 + 2\sqrt{x}}{4x}$$

$y' =$ $\frac{9}{4} - \frac{1}{4x\sqrt{x}}$

19. Question Details SCalcET6 3.1.025. [1816663]

Differentiate the following function.

$$f(x) = 2\pi^8$$

$f'(x) =$ 0

20. Question Details SCalcET6 3.1.026. [1817254]

Differentiate the function.

$$g(u) = \sqrt{7}u + \sqrt{5u}$$

$g'(u) =$ $\sqrt{7} + \frac{\sqrt{5}}{2\sqrt{u}}$

21. Question Details SCalcET6 3.1.029. [1817020]

Differentiate the function.

$$u = \sqrt[7]{t} + 2\sqrt{t^7}$$

$u' =$ $\frac{1}{7}t^{-\frac{6}{7}} + 7t^{\frac{5}{2}}$

22. Question Details SCalcET6 3.1.034. [1816382]

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

$$y = x^4 + 4x^2 - x, \quad (1, 4)$$

$y =$ $11x - 7$

23. Question Details SCalcET6 3.1.035. [1817327]

Find equations of the tangent line and normal line to the curve at the given point.

$$y = x^4 + 3e^x, \quad (0, 3)$$

tangent line $y =$ $3x + 3$

normal line $y =$ $-\frac{1}{3}x + 3$

24. Question Details SCalcET6 3.2.004. [1816440]

Differentiate.

$g(x) = 9e^x\sqrt{x}$

$g'(x) =$ $\frac{9}{2}x^{-\frac{1}{2}}e^x(2x+1)$

25. Question Details SCalcET6 3.2.005. [1817144]

Differentiate.

$y = \frac{e^x}{8x^2}$

$y' =$ $\frac{e^x(x-2)}{8x^3}$

26. Question Details SCalcET6 3.2.007. [1817098]

Differentiate.

$g(x) = \frac{6x-1}{5x+1}$

$g'(x) =$ $\frac{11}{(5x+1)^2}$

27. Question Details SCalcET6 3.2.008. [1816275]

Differentiate.

$f(t) = \frac{2t}{2+t^2}$

$f'(t) =$ $\frac{4-2t^2}{(2+t^2)^2}$

28. Question Details SCalcET6 3.2.009. [1817279]

Differentiate.

$V(x) = (3x^3 + 4)(x^4 - 3x)$

$V'(x) =$ $21x^6 - 20x^3 - 12$

29. Question Details SCalcET6 3.2.01.XP. [1816925]

Differentiate.

$y = \frac{t^2}{2t^2 - 2t + 1}$

$y' =$ $\frac{-2t^2+2t}{(2t^2-2t+1)^2}$

30. Question Details SCalcET6 3.2.010. [1816620]

Differentiate.

$Y(u) = (u^{-2} + u^{-3})(u^5 - 6u^2)$

$Y'(u) =$ $3u^2 + 2u + \frac{6}{u^2}$

31. Question Details SCalcET6 3.2.011.MI.SA. [1569598]

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

Differentiate the following function.

$$F(y) = \left(\frac{1}{y^2} - \frac{7}{y^4}\right)(y + 5y^3)$$

32. Question Details SCalcET6 3.2.012. [1817522]

Differentiate.

$R(t) = (t + e^t)(8 - \sqrt{t})$

$R'(t) =$ $8 + 8e^t - \frac{3}{2}\sqrt{t} - \sqrt{t}e^t - \frac{e^t}{2\sqrt{t}}$

33. Question Details SCalcET6 3.2.013. [1817478]

Differentiate.

$y = \frac{x^5}{3 - x^4}$

$y' =$ $\frac{x^4(15 - x^4)}{(3 - x^4)^2}$

34. Question Details SCalcET6 3.2.014. [1816845]

Differentiate.

$y = \frac{x + 3}{x^3 + x - 4}$

$y' =$ $-\frac{2x^3 + 9x^2 + 7}{(x^3 + x - 4)^2}$

35. Question Details SCalcET6 3.2.015. [1816815]

Differentiate.

$$y = \frac{t^2 + 5}{t^4 - 2t^2 + 4}$$

$y' =$ $\dfrac{2t\left(-t^4 - 10t^2 + 14\right)}{\left(t^4 - 2t^2 + 4\right)^2}$

36. Question Details SCalcET6 3.2.016. [1816021]

Differentiate.

$$y = \frac{t}{(t - 7)^2}$$

$y' =$ $\dfrac{-t - 7}{(t - 7)^3}$

37. Question Details SCalcET6 3.2.02.XP. [1817145]

Differentiate.

$$y = \frac{t^3 + t}{t^4 - 6}$$

$y' =$ $\dfrac{-t^6 - 3t^4 - 18t^2 - 6}{\left(t^4 - 6\right)^2}$

38. Question Details SCalcET6 3.2.021. [1816645]

Differentiate.

$$f(t) = \frac{2t}{2 + \sqrt{t}}$$

$f'(t) =$ $\dfrac{4 + \sqrt{t}}{\left(2 + \sqrt{t}\right)^2}$

39. Question Details SCalcET6 3.2.022. [1817500]

Differentiate.

$$g(t) = \frac{t - \sqrt{t}}{t^{1/7}}$$

$g'(t) =$ $\dfrac{6}{7}t^{-\frac{1}{7}} - \dfrac{5}{14}t^{-\frac{9}{14}}$

40. Question Details SCalcET6 3.2.024. [1817265]

Differentiate.

$f(x) = \dfrac{2 - xe^x}{x + e^x}$

$f'(x) =$ $\dfrac{-x^2e^x - e^{2x} - 2e^x - 2}{(x + e^x)^2}$

41. Question Details SCalcET6 3.2.031. [1817230]

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

$y = \dfrac{4x}{x + 3}$, $(1, 1)$

$y =$ $\dfrac{3}{4}x + \dfrac{1}{4}$

42. Question Details SCalcET6 3.2.033. [1817435]

Find equations of the tangent line and normal line to the given curve at the specified point.

$y = 2xe^x$, $(0, 0)$

tangent line $y =$ $2x$

normal line $y =$ $-\dfrac{1}{2}x$

43. Question Details SCalcET6 3.2.034. [1817344]

Find the equations of the tangent line and normal line to the given curve at the specified point.

$y = \dfrac{\sqrt{x}}{x + 6}$, $\left(4, \dfrac{1}{5}\right)$

tangent $y =$ $\dfrac{1}{200}x + \dfrac{9}{50}$

normal $y =$ $-200x + \dfrac{4001}{5}$

44. Question Details SCalcET6 3.2.035. [1291049]

The curve below is called a **witch of Maria Agnesi**. Find an equation of the tangent line to this curve at the point (-4, 1/17).

$y = \dfrac{1}{1 + x^2}$

$y =$ $\dfrac{8x}{289} + \dfrac{49}{289}$

45. Question Details SCalcET6 3.2.037. [1816896]

Differentiate.

$$f(x) = \frac{6e^x}{x^3}$$

$f'(x) =$ $\dfrac{6e^x\,(x-3)}{x^4}$

46. Question Details SCalcET6 3.2.038. [1817181]

Differentiate.

$$f(x) = \frac{x}{x^2 - 7}$$

$f'(x) =$ $\dfrac{-7-x^2}{(x^2-7)^2}$

Assignment Details

Name (AID): **MATH 141 HW 05 (6328074)**
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Category: **Homework**
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Locked: **Yes**
Author: **Blanco-Silva, Francisco (** blanco@math.sc.edu **)**
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