AP Calc WS# 13 Derivative Practice Name: \_\_\_\_\_\_\_\_\_\_\_

Take derivative of the following function f(x)

1. 4x3 – 3x2 + 2x + e 2. $\frac{x^{2}}{3}-\frac{3}{x^{2}}$ 3. -3(2x2 -5x + 1)

4. $\sqrt{x}-\frac{1}{\sqrt{x}}$ 5. $\frac{x+1}{x-2}$ 6. $\frac{x^{2}-2}{x^{2}}$

7. $\sqrt{x}(x^{2}+1)$ 8. $\frac{x^{2}}{x^{2}-2}$ 9. $\frac{e^{x}}{e^{x}-1}$

10. $\frac{2}{\sqrt{x}}+\frac{\sqrt{x}}{2}$ 11. $\frac{2x}{x-1}$ 12. (3x -2)(2x + 1)

13. $5x^{2}-5\sqrt{x}-\frac{3}{x}$ 14. $\frac{\sqrt{x}}{\sqrt{x}-1}$ 15. $\frac{e^{x}}{x}$

16. $6x^{\frac{-3}{2}}+7x^{\frac{1}{5}}+1$ 17. $\frac{-7}{1-x^{3}}$ 18. $\frac{4}{3}x^{\frac{3}{4}-π}$

19. $\frac{1}{7x}$ 20. $2x^{\frac{1}{x}-e}$ 21. $e^{lnx^{2}}-3x^{-7}$

22. (3x2 – 4)5 23. 3x2 (23x) 24. e2x – 1 (3x + 4)3

25. $\frac{e^{x^{2}}}{(2x-1)^{3}}$ 26. (e2x + x)(3x2 – 2x + x)4 27. $\frac{(2-3x^{2})^{5}}{5x}$

28. $cos^{3}(\sqrt{x})$ 29. $\left(\frac{cos(x)}{1-sin(x)}\right)^{2}$ 30. (17x2 – 5x)50

31. e2x(sin(3x)) 32. $\sqrt{sin(x)}$ 33. $\frac{tan(x)}{x^{2}-1}$

34. arcsin(x2) 35. (x2 + 1) arctan(x) 36. [arccos(x)]4

37. tan(6x) 38. $\frac{sin2x}{cos2x}$ 39. 5x + 3x7

40. $\frac{sinx}{x^{2}}$ 41. $tan(sinx)+\frac{1}{π}$ 42. 3 cos(5x) + 3sin(x9)

43. sin3(3x2 – 2x + 1) 44. $x^{2}tan\left(\frac{1}{x}\right)$ 45. $sin^{2}\sqrt{x}$

46. e3x cos(2x) 47. [arcsin(x3)]4 48. tan(6x2 – 1)

49. sin(3x)ex 50. $\frac{sec^{2}x-tan^{2}x}{x^{3}}$ 51. $\frac{cosx}{x^{3}}$

52. sin(sin(4x)) + 1/e 53. cos2 (3x2 – 7x) 54. $x^{3}sin\left(\frac{1}{x}\right)$

55. $cos^{4}\sqrt{x}$ 56. $\frac{tanx}{2x-1}$ 57. $\sqrt[3]{sinx-1}$

58. $\frac{4}{x}3^{x^{2}-x}$ 59. $(sinx)e^{3x}+π^{2}$ 60. $\frac{π}{e^{x}+e^{-x}}$

61. $\frac{1}{7}cosx+\frac{1}{6}sinx$ 62. $\frac{csc^{2}x-cot^{2}x}{x}$ 63. $\frac{cos(9x)}{sin(9x)}$

64. $sin(tanx)+\frac{1}{37}$ 65. $4x^{5}tan\left(\frac{-1}{x}\right)$ 66. arcsin (x2)

67. [arccos(x)]3 68. arctan(ex) 69. arctan(-5x)

70. arccos(x3) 71. 2y = x2 + sin y 72. 3y = x3 + cos y