Mastery Exam Retake Review

1. $y = \frac{8x^3-7x}{37x^4-8}$
   $\frac{dy}{dx} =$ _____

2. $y = 12\sqrt{5x^3-3}$
   $\frac{dy}{dx} =$ _____

3. $y = x^9 - 5x^{-7}$
   $\frac{dy}{dx} =$ _____

4. $y = 15e^3$
   $\frac{dy}{dx} =$ _____

5. $9y - 2 = 10x^3 - 5xy$
   $\frac{dy}{dx} =$ _____

6. $y = -\csc(\cot(x))$
   $\frac{dy}{dx} =$ _____

7. $y = \cos\left(x^{\frac{2}{7}}\right)$
   $\frac{dy}{dx} =$ _____

8. $y = 10\ln(3x-2)$
   $\frac{dy}{dx} =$ _____

9. $y = \sin^{-1}(5x-2)$
   $\frac{dy}{dx} =$ _____

10. $y = e^{-2x}\left(\frac{5}{x} + 12x^2\right)$
    $\frac{dy}{dx} =$ _____

11. $y = 15.782$
    $\frac{dy}{dx} =$ _____

12. $y = \sin\left(15x^3 - 8x\right)$
    $\frac{dy}{dx} =$ _____

13. $y = e^{x^3}$
    $\frac{dy}{dx} =$ _____

14. $y = \ln\left(\cos(2x)\right)$
    $\frac{dy}{dx} =$ _____

15. $y = x^{\frac{3}{2}} + 3x^{\frac{9}{2}}$
    $\frac{dy}{dx} =$ _____

16. $y = \csc(\ln(x))$
    $\frac{dy}{dx} =$ _____

17. $y = \csc^{11}(5x-2)$
    $\frac{dy}{dx} =$ _____

18. $y = 15\cot(11x) - \sin(15x)$
    $\frac{dy}{dx} =$ _____

19. $y = 17^{5x^2}$
    $\frac{dy}{dx} =$ _____

20. $y = 3x\sqrt{9x^3 - 17x + 3}$
    $\frac{dy}{dx} =$ _____

21. $y = \frac{19x^7+10x}{7x^2-1}$
$\frac{dy}{dx} =$ _____

22. $y = -\sqrt[3]{23x^7}$
$\frac{dy}{dx} =$ _____

23. $y = -4x^4 + 15x^{-\frac{2}{19}}$
$\frac{dy}{dx} =$ _____

24. $y = 9e^{\pi}$
$\frac{dy}{dx} =$ _____

25. $y^3 - 5y = x + 2$
$\frac{dy}{dx} =$ _____

26. $y = \tan(\cos(x))$
$\frac{dy}{dx} =$ _____

27. $y = 15\tan(7x - 7)$
$\frac{dy}{dx} =$ _____

28. $y = -\ln\left(9x^6 - 13x\right)$
$\frac{dy}{dx} =$ _____

29. $y = \tan^{-1}\left(x^7 - 15x^3\right)$
$\frac{dy}{dx} =$ _____

30. $y = 4e^{x^2}\left(x^6 - 15x\right)$
$\frac{dy}{dx} =$ _____

31. $y = \frac{e}{19}$
$\frac{dy}{dx} =$ _____

32. $y = \sec\left(\ln(2x)\right)$
$\frac{dy}{dx} =$ _____

33. $y = 5e^{-x}$
$\frac{dy}{dx} =$ _____

34. $y = 3\ln\left(x^3\right)$
$\frac{dy}{dx} =$ _____

35. $y = 6x^{-\frac{1}{4}} + 7x^{-\frac{3}{4}}$
$\frac{dy}{dx} =$ _____

36. $y = \cot\left(x^6 - 19x\right)$
$\frac{dy}{dx} =$ _____

37. $y = 7\cos^3(5x - 2)$
$\frac{dy}{dx} =$ _____

38. $y = -\tan(17x) - \csc^2\left(x^{-2}\right)$
$\frac{dy}{dx} =$ _____

39. $y = 3^{3x}$
$\frac{dy}{dx} =$ _____

40. $y = 19e^{-7x}\left(7x - \frac{3}{13x}\right)$
$\frac{dy}{dx} =$ _____

41. $y = \frac{6x^6-13}{15x^4-2}$
$\frac{dy}{dx} =$ _____

42. $y = -3\sqrt{7x^3 - 5x}$
$\frac{dy}{dx} =$ _____

43. $y = 6x^3 + 9x^{-3}$
$\frac{dy}{dx} =$ _____

44. $y = e^7$
$\frac{dy}{dx} =$ _____

45. $5y = 9x + 3xy$
$\frac{dy}{dx} =$ _____

46. $y = 7\cos(\sin(x))$
$\frac{dy}{dx} =$ _____

47. $y = 8\cot\left(5\sqrt{2x}\right)$
$\frac{dy}{dx} =$ _____

48. $y = \ln\left(\frac{3x}{x+2}\right)$
$\frac{dy}{dx} =$ _____

49. $y = \cos^{-1}(-6x)$
$\frac{dy}{dx} =$ _____

50. $y = -7x^3\sqrt[5]{9x^3 - 2}$
$\frac{dy}{dx} =$ _____

51. $y = \ln(\cos(\pi))$
$\frac{dy}{dx} =$ _____

52. $y = \cos(3x + 9)$
$\frac{dy}{dx} =$ _____

53. $y = e^{\sqrt{x}}$
$\frac{dy}{dx} =$ _____

54. $y = \ln(\sec(5x))$
$\frac{dy}{dx} =$ _____

55. $y = 17x^{-\frac{4}{5}} + 7x^{\frac{9}{7}}$
$\frac{dy}{dx} =$ _____

56. $y = 17\csc\left(x^3 - 1\right)$
$\frac{dy}{dx} =$ _____

57. $y = \tan^{12}\left(x^{-2}\right)$
$\frac{dy}{dx} =$ _____

58. $y = \sin^3 x - 7\cos x$
$\frac{dy}{dx} =$ _____

59. $y = 29^{5x}$
$\frac{dy}{dx} =$ _____

60. $y = 5e^{3x^2}\left(e^{3x} - x^{-3}\right)$
$\frac{dy}{dx} =$ _____

61. $y = \frac{3x+6}{3x^{15}-9x}$
$\frac{dy}{dx} =$ _____

62. $y = -17\sqrt[4]{15x-3}$
$\frac{dy}{dx} =$ _____

63. $y = 15x^{\frac{2}{3}} - x^{-\frac{7}{9}}$
$\frac{dy}{dx} =$ _____

64. $y = \sin(3\pi)$
$\frac{dy}{dx} =$ _____

65. $y - 9 = 5x^2 + xy$
$\frac{dy}{dx} =$ _____

66. $y = \sec(\sin(x))$
$\frac{dy}{dx} =$ _____

67. $y = \cot(3x^7 - 4)$
$\frac{dy}{dx} =$ _____

68. $y = 3\ln(3x)$
$\frac{dy}{dx} =$ _____

69. $y = \cot^{-1}\left(\sqrt{2x}\right)$
$\frac{dy}{dx} =$ _____

70. $y = \left(\cos^3(3x) - \frac{9}{x}\right)\left(x^3 + 3x^5\right)$
$\frac{dy}{dx} =$ _____

71. $y = 7e^8$
$\frac{dy}{dx} =$ _____

72. $y = \tan\left(\frac{1}{x}\right)$
$\frac{dy}{dx} =$ _____

73. $y = e^{-5x}$
$\frac{dy}{dx} =$ _____

74. $y = 2\ln\left(x^3 - 2x\right)$
$\frac{dy}{dx} =$ _____

75. $y = 3x^{-\frac{4}{2}} - x^{\frac{2}{3}}$
$\frac{dy}{dx} =$ _____

76. $y = \tan\left(\frac{9x}{3x^2}\right)$
$\frac{dy}{dx} =$ _____

77. $y = 6\sin^7(8x)$
$\frac{dy}{dx} =$ _____

78. $y = 3\sin(3x-7) - \cos(\sqrt{3x})$
$\frac{dy}{dx} =$ _____

79. $y = 8^{19x^3}$
$\frac{dy}{dx} =$ _____

80. $y = e^{7x}\left(9\cos x + \frac{2x}{x^2+1}\right)$
$\frac{dy}{dx} =$ _____

81. $y = \frac{32x^9+17x}{3x^2-x}$
$\frac{dy}{dx} =$ _____

82. $y = -9\sqrt{27x^5 - 3x}$
$\frac{dy}{dx} =$ _____

83. $y = 9x^5 - 14x^{-2}$
$\frac{dy}{dx} =$ _____

84. $y = 9\pi^3$
$\frac{dy}{dx} =$ _____

85. $y^2 - 1 = 5xy + y$
$\frac{dy}{dx} =$ _____

86. $y = \sin(\cos(\sqrt{x}))$
$\frac{dy}{dx} =$ _____

87. $y = 9\sec\left(5x^3 - 17x\right)$
$\frac{dy}{dx} =$ _____

88. $y = \ln(5x^3 + 7x)$
$\frac{dy}{dx} =$ _____

89. $y = \cot^{-1}\left(6x^5 - 2\right)$
$\frac{dy}{dx} =$ _____

90. $y = -2x\sqrt{5x^2 - x}$
$\frac{dy}{dx} =$ _____

91. $y = \pi^2$
$\frac{dy}{dx} =$ _____

92. $y = \csc\left(5x^3 - 2\right)$
$\frac{dy}{dx} =$ _____

93. $y = 7e^{2x}$
$\frac{dy}{dx} =$ _____

94. $y = \frac{\ln(x)}{2}$
$\frac{dy}{dx} =$ _____

95. $y = 8x^{-\frac{10}{11}} - 12x^{\frac{13}{12}}$
$\frac{dy}{dx} =$ _____

96. $y = 19\sec\left(9x^3 + 2\right)$
$\frac{dy}{dx} =$ _____

97. $y = 12\cos^4(13x)$
$\frac{dy}{dx} =$ _____

98. $y = \csc(7x) - \cos(x - 1)$
$\frac{dy}{dx} =$ _____

99. $y = 19^{-5x}$
$\frac{dy}{dx} =$ _____

100. $y = 5e^x\left(19x^2 - \frac{3}{x^3}\right)$
$\frac{dy}{dx} =$ _____