

Mastery Exam Retake Review

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$31. y = \frac{e}{19}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$32. y = \sec(\ln(2x))$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$33. y = 5e^{-x}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$24. y = 9e^\pi$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$34. y = 3 \ln(x^3)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$25. y^3 - 5y = x + 2$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$26. y = \tan(\cos(x))$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$36. y = \cot(x^6 - 19x)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$27. y = 15 \tan(7x - 7)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$37. y = 7 \cos^3(5x - 2)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$28. y = -\ln(9x^6 - 13x)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$38. y = -\tan(17x) - \csc^2(x^{-2})$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$29. y = \tan^{-1}(x^7 - 15x^3)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$39. y = 3^{3x}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$30. y = 4e^{x^2}(x^6 - 15x)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$51. y = \ln(\cos(\pi))$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$42. y = -3\sqrt{7x^3 - 5x}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$52. y = \cos(3x + 9)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$43. y = 6x^3 + 9x^{-3}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$53. y = e^{\sqrt{x}}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$44. y = e^7$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$54. y = \ln(\sec(5x))$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$45. 5y = 9x + 3xy$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$46. y = 7 \cos(\sin(x))$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$56. y = 17 \csc(x^3 - 1)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$47. y = 8 \cot(5\sqrt{2x})$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$57. y = \tan^{12}(x^{-2})$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$58. y = \sin^3 x - 7 \cos x$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$59. y = 29^{5x}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$60. y = 5e^{3x^2} (e^{3x} - x^{-3})$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$71. y = 7e^8$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$73. y = e^{-5x}$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$64. y = \sin(3\pi)$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$74. y = 2 \ln(x^3 - 2x)$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$65. y - 9 = 5x^2 + xy$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$66. y = \sec(\sin(x))$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$67. y = \cot(3x^7 - 4)$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$77. y = 6 \sin^7(8x)$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$68. y = 3 \ln(3x)$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$69. y = \cot^{-1}(\sqrt{2x})$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

$$79. y = 8^{19x^3}$$

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10em}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$91. y = \pi^2$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$92. y = \csc(5x^3 - 2)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$83. y = 9x^5 - 14x^{-2}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$93. y = 7e^{2x}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$84. y = 9\pi^3$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$85. y^2 - 1 = 5xy + y$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$86. y = \sin(\cos(\sqrt{x}))$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$96. y = 19 \sec(9x^3 + 2)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$87. y = 9 \sec(5x^3 - 17x)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$97. y = 12 \cos^4(13x)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$88. y = \ln(5x^3 + 7x)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$98. y = \csc(7x) - \cos(x - 1)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$89. y = \cot^{-1}(6x^5 - 2)$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$99. y = 19^{-5x}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

$$90. y = -2x\sqrt{5x^2 - x}$$

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

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

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$