

Answers to Calculus AB Summer Assignment

1. $4x^2 + 12x + 9$	2. $2x^6 + 3$
3. $2a^2 + 4ah + 2h^2 + 5$	4. 9
5. $2x + h$	6. $2x - 3 + h$
7. $x = 0, \pm 4$ $y = 0$	8. $x = 0, 1$ $y = 0$
9. $x = \frac{1}{2}$ $y = -\frac{1}{4}$	10. $D: (-\infty, \infty)$ $R: [-5, \infty)$
11. $D: [-3, \infty)$ $R: (-\infty, 0]$	12. $D: (-\infty, \infty)$ $R: [-3, 3]$
13. $D: (-\infty, -3) \cup (-3, 3) \cup (3, \infty)$ $R: (-\infty, \infty)$	14. $D: (-\infty, -2) \cup (-2, 3) \cup (3, \infty)$ $R: (-\infty, \infty)$
15. $D: (-\infty, \infty)$ $R: [0, 3)$	16. $D: (-\infty, 1) \cup (1, \infty)$ $R: (-\infty, 0) \cup (0, \infty)$
17. $y = 3x + 5$	18. $y - 5 = \frac{2}{3}(x - 0)$ or $y = \frac{2}{3}x + 5$
19. $y - 2 = -1(x - 1)$ or $y = -x + 3$	20. $y = 2$
21. $x = -4$	22. $y - 8 = \frac{5}{6}(x - 2)$ or $y = \frac{5}{6}x + \frac{19}{3}$
23. $y + 3 = -\frac{6}{5}(x - 2)$ or $y = -\frac{6}{5}x - \frac{3}{5}$	24. $\frac{\sqrt{5}}{2}$
25. $\frac{13}{5}$	26. $\frac{12}{13}$
27. $\frac{7}{8}$	28. $x = 0$
29. $x = \pm 2$	30. $x = 0, 1$
31. $y = 0$	32. $y = -\frac{5}{3}$
33. No Horizontal Asymptote	34. $x = 1, 5$

35. $x = -1, \frac{3 \pm \sqrt{21}}{6}$	36. $t = 1$
37. $x = 0, \pi, \frac{\pi}{2}$	38. $\frac{1}{x^2 + a^2}$
39. $x^{\frac{5}{2}} - 2x^{\frac{3}{2}} + x^{\frac{1}{2}}$	40. $\frac{x^2 - x + xh - h - 2}{xh(x + h + 2)}$
41. $\frac{-(2x + h)}{x^2(x + h)^2}$	42. $\frac{1}{xy}$
43. $\frac{xy}{x + y}$	44. $\frac{x - 4}{x(x - 1)}$
45. $8a^6b^{-1}$	46. $\frac{2}{3}a^2b^{-1}$
47. $ab^{-1}$	48. $a^{-\frac{3}{2}}b$
49. $a^{\frac{5}{6}}b^{\frac{1}{2}}$	50. $z = \frac{-(y^2 + 2xy)}{x(3y + 2x)}$
51. $z = \frac{1}{1 - \sin y}$	52. $y = \frac{\ln(2(x^3 + 2))}{2}$
53. $k = -3$	54. 9
55. $\frac{26}{9}$	56. $c = -1$
57. $c = \frac{27}{4}$	58. 4
59. $e^4 - 9$	60. $\frac{3}{2}$
61. $\frac{96}{5}$	62. $\frac{3}{2}$
63. $\frac{17}{3}$	64. 21
65. $2^{3+m}$	66. $a^{2k} + a^k - 6$

67. $x - 10x^2$	68. $-\frac{\sqrt{3}}{2}$
69. $-\frac{\sqrt{2}}{2}$	70. $-45^\circ, 315^\circ$ or $-\frac{\pi}{4}, \frac{7\pi}{4}$
71. $270^\circ$ or $\frac{3\pi}{2}$	72. $\frac{\sqrt{2}}{2}$
73. $60^\circ$ or $\frac{\pi}{3}$	74. $\frac{\sqrt{3}}{3}$
75. $180^\circ$ or $\pi$	76. $\frac{2\sqrt{3}}{3}$
77. $x^2 - x + 1 + \frac{x^2 + 3}{x^3 + 1}$	78. $x = 2, -\frac{1}{3}, \frac{1}{4}$
79. $x = 2, y = -1$	80. $y = x^2 - 3x + 2$
81. $y = x(x+1)^3(x^2 + 3x + 3)$	82. $y = \cos(\sin^{-1}(x))$

83-89. On graph Paper

90. $-\frac{129}{50}$	91. $\frac{211}{10}$
92. $\frac{134}{15}$	93. $x = -0.39$
94. 3	95. $-0.368$
96b. $[5.23, 18.77]$	97. 3
98. $x = 30.174$	99. $(-\infty, 1]$
100. $(-\infty, 1) \cup (1, \infty)$	