

BC Calculus

Test # 4 (1–80) Review Answers

71a. $\frac{8}{3} \text{ units}^2$

b. $\frac{46}{5} \pi \text{ units}^3$

72a. $17^{3x^2-5x}(6x-5)\ln 17$

b. $\frac{1}{x \ln 6}$

c.
$$\begin{cases} -2x, & |x| < 3 \\ 2x, & |x| > 3 \\ \text{d.n.e.}, & |x| = 3 \end{cases}$$

73a. $\frac{7^{5x}}{\ln(16,807)} + C$

b. $x \log_4 x - \frac{x}{\ln 4} + C$

74. $2450\sqrt{2} \text{ newtons}$

75a. Yes: f is continuous so $f(4) = \lim_{x \rightarrow 4} f(x)$

b. $4a + 2b = -1$

76a. $\sin x - \frac{1}{3} \sin^3 x + C$

b. $-\frac{1}{7} \cos^7 x + \frac{\cos^9 x}{9} + C$

77. $176,400 - 58,800\sqrt{2} \text{ joules}$

78. $t = \frac{2}{3}, \quad t = -2.296, 3.629$

79a. 1 b. 0 c. 0 d. $-\infty$ e. d.n.e.

80a. $x = 0, x = -6, x = 3, y = 0$

b. $x = -3, y = x - 3$ hole @ $(0, -\frac{1}{3})$



