

MATH 1306 – Homework Handout # 9
Answers To Odd-numbered Problems

- 1a. $A(5) = 20000e^{0.077(5)} = 20000e^{0.385} \approx 20000(1.4696) = 29\,392.20$ dollars
1b. $A'(t) = 20000(0.077e^{0.077t}) = 1540e^{0.077t}$
1c. $A'(5) = 1540e^{0.077(5)} = 1540e^{0.385} \approx 1540(1.4696) = 2263.18$ dollars per year ;
After 5 years, the value of the CD is increasing by \$2263.18 per year.

3.
$$area = \int_1^3 (x^3 - 3x^2 + 5) dx$$

5a.
$$\int_0^B f(x) dx = 10 - 10 = 0$$

5b.
$$\int_A^C f(x) dx = -10 + 12 = 2$$

- 7a. $area = (1)(0.1) = 0.1$ square units
7b. (number of blocks)(area of 1 block) = $(1.75)(0.1) = 0.175 = 17.5\%$ approximately
7c. (number of blocks)(area of 1 block) = $(2.6)(0.1) = 0.26 = 26\%$ approximately
7d. Approximately 1 hr ; About 50% of students spend less than 1 hr each day using the Internet and about 50% spend more than 1 hr each day.
9a. $area = (0.5)(0.1) = 0.05$ square units
9b. (number of blocks)(area of 1 block) $\approx (5.1)(.05) = 0.255 = 25.5\%$ approximately
9c. (number of blocks)(area of 1 block) $\approx (5.95)(.05) = 0.2975 = 29.75\%$ approximately
9d. About 1.5 visits per year ; About 50% of Americans visit the dentist less than 1.5 times per year, and about 50% visit more than 1.5 times per year.