

Kerry Ojakian's MTH 32 Class

Due Date: Thursday November 17

HW #3

General Instructions:

- Homework must be stapled, be relatively neat, and have your name on it. It must be on separate paper, not on this paper (though you do not need to copy the question).
- Homework exercises must be done in order (if you skip an exercise, still write down the number and leave some blank space).
- Don't copy!

The Assignment

Page number available on PDF (not when read online). All problems from CALCULUS 2 book, EXCEPT the few mentioned at the end!

1. Find the length of the curve $y = 2x^{3/2}$ from the point $(0, 0)$ to $(1, 2)$.
2. Find the surface area obtained by rotating $y = \cos(x/2)$ (for $0 \leq x \leq \pi$) about the x-axis.
3. $\int_0^1 \frac{2}{2x^2 + 3x + 1} dx$
4. $\int_0^{2/3} \sqrt{4 - 9x^2} dx$
5. Section 3.7: 349, 350, 367
6. Section 3.7: 396, 398, 399
7. Section 3.7: 372, 373 (just determine if the integral converges or diverges; if it converges, do **not** evaluate).
8. For each integral just determine if it converges or diverges.

(a) $\int_0^{\infty} \frac{x}{x^3 + 1} dx$

(b) $\int_0^{\pi} \frac{\sin^2 x}{\sqrt{x}} dx$

9. From CALCULUS ONE Textbook! Section 4.8 (page 470): 367, but do it TWO ways: using L'Hospital AND not using L'Hospital.
10. From CALCULUS ONE Textbook! Section 4.8 (page 470): 365, 371, 385
11. $\lim_{x \rightarrow 1} \frac{x}{x-1} - \frac{1}{\ln x}$