

Assignment #08 – MATH 1401
Spring 2006

Kawai

Name: _____

- Attach this cover sheet to this assignment.
- Use engineering pad paper! Please leave some room for corrections/comments!
- Give enough information about the problem so that the grader does NOT need to refer back to the text!
- Turn in the following:

Section 3.2: #12, 14, 20, 22, 24, 30.

Section 3.2: #32. Tricky. x can be rewritten as $\ln(???)$.

Section 3.2: #36. Done in class?

Section 3.2: #45. [worth 2 pts.]

– Compute $\lim_{x \rightarrow 0} \frac{\sin(x^2)}{x^2}$ using TWO methods.

– First, use L'Hôpital's (easy). Second, let $u = x^2$. As $x \rightarrow 0$, $u \rightarrow ?$. The two answers should agree.

– Now find this limit:

$$\lim_{x \rightarrow 0} \frac{\sin(x^{666})}{x^{666}} = ???$$

– For part (b) to #45, it should be clear (by substitution) that

$$\lim_{x \rightarrow 0} \frac{1 - \cos(x^2)}{x^4} = \lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x^2} = ???$$

Section 3.3: #2, 4, 8.