

# Reading Assignment # 15

Math 13 - Prof. Orellana

February 12, 2006

Read Sections 6.1 - Review integration by parts.

Don't forget to let me know the pages where you found the answers. You should write full sentences when you do these assignments to help you study from them before the next exam.

1. What is described in Section 6.1?
2. Read the interpretation of the scalar line integral in terms of electrical charge and explain what it says.
3. How is the scalar line integral defined?
4. What does the notation  $\int_{\mathbf{x}} f ds$  suggests ?
5. What is the difference between a path of class  $C^1$  and a "piecewise  $C^1$ "?
6. Define the vector line integral? Compare with the scalar line integral and tell me the differences?
7. What is the physical interpretation of the vector line integral?
8. Read the "other interpretations and formulations" section and tell me how to rewrite the vector line integral using the unit tangent vector? What does it represent?
9. What is the vector line integral called in the case that the path is a "closed path" ?
10. What does the boxed equation in page 368 mean? How do we call such an expression? How do we compute it?