

# Reading Assignment # 11

Math 13 - Prof. Orellana

January 26, 2006

Read Sections 5.2 and 5.3 - Review integration by parts.

Don't forget to let me know the pages where you found the answers.

1. What does it mean to say that “the set of discontinuities has zero area”? Give an example. State the theorem that uses this terminology.
2. What does Fubini's Theorem says and what does it “demonstrate”?
3. What are the properties of the double integral?
4. What other “elementary regions”, other than rectangles, will we consider to integrate over?
5. What is  $f^{\text{ext}}$  and how is it called?
6. State Theorem 2.10, what does this theorem provides us with?
7. How is  $f^{\text{ext}}$  used in the proof of Theorem 2.10?
8. If we want to find the area of a region  $D$  in the  $xy$ -plane, what double integral should you compute?
9. What does Fubini's Theorem (Theorem 2.6) say about the order of integration when we compute the double integral over a rectangle?
10. For what elementary regions can we change the order of integration? Why?