

18.022: Multivariable calculus - problem set 3 - fall 2006

Due by 1:45 PM, Room 2-106, Friday 9/29.

Note that we use 3rd edition of the text for reference and earlier editions may number problems differently. Whilst you may attempt problems in any order, graders will appreciate if you hand in your problems in order. By all means, please try to help the graders.

1. (5 points)1.7.39
2. (5 points)1.7.42
3. (5 points)2.1.1
4. (5 points)2.1.13
5. (5 points)2.1.14
6. (5 points)2.1.15
7. (5 points)2.1.27
8. (5 points)2.2.1
9. (5 points)2.2.2
10. (5 points)2.2.9
11. (5 points)2.2.11
12. (5 points)2.2.23
13. (5 points)2.2.28
14. (5 points)2.2.29
15. (5 points)2.2.30
16. (5 points)2.2.32
17. (5 points)2.2.39
18. (5 points)2.2.42
19. (5 points)2.2.45
20. (5 points)Let $f : X \rightarrow Y$ and $g : Y \rightarrow Z$ be two functions, and let $g \circ f : X \rightarrow Z$ be the composite function defined by $(g \circ f)(x) = g(f(x))$. Suppose that $g \circ f : X \rightarrow Z$ is bijective.
 - (a) What can you say about $f : X \rightarrow Y$?
 - (b) What can you say about $g : Y \rightarrow Z$?

Total: 100 points