

MAT 141
Problem Set #13

due in recitation on December 9 or 10, 2004

1. Apostol, section 4.9, # 5, 16
2. Apostol, section 4.12 # 1–12, 22
3. Apostol, section 4.15 # 4
4. Assume that f_1, f_2, \dots, f_n are differentiable functions. Prove that their product $f_1 f_2 f_3 \cdots f_n$ is differentiable and that

$$(f_1 f_2 f_3 \cdots f_n)' = \sum_{k=1}^n f_1 f_2 \cdots f_{k-1} f'_k f_{k+1} \cdots f_n$$