Math 220 (section AD9) **Quiz 13** **Spring 2011**

Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. (4 points) Find the average value of the function $f(x) = 3\tan x \sec^2 x$ on the interval $[\pi/4, \pi/3]$. Simplify your answer.

Let $\mathbf{R}$ be the region bounded by the x-axis and the graph of $y = 5x^3 + 2e^{7x}$ on the interval $[1, 4]$. Set up, but do not evaluate, definite integrals which represent the given quantities. Use proper notation.

(a) (3 points) The volume of the solid obtained when $\mathbf{R}$ is revolved around the y-axis.

(b) (3 points) The volume of the solid obtained when $\mathbf{R}$ is revolved around the vertical line $x = 6$.