Math 16B
Vogler
Worksheet 7

1.) Evaluate the following definite integrals.

a.) $\int_0^{\pi/6} (1 + \cos 3x)\ dx$

b.) $\int_{\pi/4}^{\pi/3} (\sec x \tan x - \sin x)\ dx$

2.) Compute the area of the region enclosed by the graphs of the following functions.

a.) $y = \cos x$, $x = \pi/4$, $x = \pi/3$, and $y = 0$

b.) $y = \sec^2 4x$, $x = 0$, $x = \pi/12$, and $y = 0$

3.) Determine the area (SET UP ONLY, DO NOT EVALUATE INTEGRALS) of the region bounded by the graphs of the following functions using

i.) vertical cross-sections.
ii.) horizontal cross-sections.

a.) $y = 0$, $y = x^2$, and $x = 2$

b.) $y = e^x$, $x = 0$, and $y = 3$

c.) $y = 3x$, $y = (1/2)x - 2$, $y = 6$, and $y = 0$

d.) $y = 0$, $y = \ln x$, and $x = e$

e.) $x = y^2$ and $x = 9$

f.) $y = e^{x^2}$ and $y = 4$