MATH 126 SPRING 2011, QUIZ 8

1. Find the hydrostatic force on a thin circular plate with radius 5 ft if the plate is submerged in water 10 ft deep (i.e., the bottom of the plate is touching the bottom of the container of water).

2. Find the centroid of the region bounded by $y = \sin x$, $y = \cos x$, $x = 0$, $x = \pi/4$. (Hint: $\cos^2 x = (1 + \cos(2x))/2, \sin^2 x = (1 - \cos(2x))/2$.)

3. Find the center of mass of a lamina with density $\rho = 2$ and whose shape is a quarter circle with radius r in quadrant 3 (i.e., lower left part of a circle with radius r).