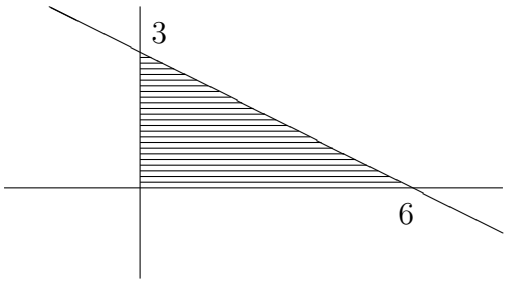
Name _____

Homework 11
section 8.4

1. (7) Find the total mass of the shaded triangular region shown below which has density $\delta(x) = (\frac{1}{2}x)^2 + 1$ kg/cm^2.



2. (7) The density of cars, given in cars per mile, along a certain stretch of road is approximated by $\delta(x) = 200(2 + \cos(.4x))$, at a distance x miles north of the Berman toll bridge. Find the total number of cars on the 15 mile stretch of road starting 5 miles south of the bridge.

3. (6) A metal plate, with constant density 3 gm/cm^2, has a shape bounded by the curve $y = \sqrt{x}$ and the x-axis, with $0 \leq x \leq 4$, and x, y in cm. Find the total mass of the plate.