

## Math 2551 Worksheet Section 15.6

1. Find the center of mass and the moment of inertia about the  $y$ -axis of a thin plate bounded by the line  $y = 1$  and the parabola  $y = x^2$  if the density is  $\delta(x, y) = y + 1$ .
2. A solid of constant density  $\delta(x, y) = 1$  is bounded below by the plane  $z = 0$ , on the sides by the elliptical cylinder  $x^2 + 4y^2 = 4$ , and above by the plane  $z = 2 - x$ . Find  $\bar{x}$  and  $\bar{y}$ .

