

Part II.	Name:	
6.	<p>A lamina with $\sigma(x, y) = 3y$ is bounded by $y = \sqrt{25 - x^2}$ and $y = 0$. Set up the integrals for:</p> <p>a) The c.m. coordinate \bar{y}.</p> <p style="text-align: right;">Ans: _____.</p>	<p>b) The moment of inertia I_z.</p> <p style="text-align: right;">Ans: _____.</p>
7.	<p>Let E be the region bounded by the coordinate planes and the plane $3x + 2y + 6z = 18$.</p> <p>a) Set up the volume integral.</p> <p style="text-align: right;">Ans: _____.</p>	<p>b) Compute the volume by any method.</p> <p style="text-align: right;">Ans: _____.</p>
8.	<p>Find the volume bounded above by the sphere $x^2 + y^2 + z^2 = 4$ and below by the cone $z = x^2 + y^2$.</p> <p>a) Set up the integral in spherical coordinates.</p> <p style="text-align: right;">Ans: _____.</p>	<p>b) Compute the integral.</p> <p style="text-align: right;">Ans: _____.</p>
9.	<p>Find the surface area of $z = x^2 - y^2$ bounded by the cylinder $x^2 + y^2 = 16$.</p> <p>a) Set up the integral.</p> <p style="text-align: right;">Ans: _____.</p>	<p>b) Compute the integral.</p> <p style="text-align: right;">Ans: _____.</p>
10.	<p>a) Write the formula for the Jacobian in \mathbf{R}^2</p> <p style="text-align: right;">Ans: _____.</p>	<p>b) Compute the Jacobian: $x = u^2 + v, y = u - 3v^2$</p> <p style="text-align: right;">Ans: _____.</p>