Name_ _____ ID_

MATH 251

Quiz 5

Spring 2006

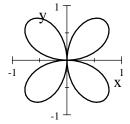
Sections 506

P. Yasskin

1-2	/20
3	/10
Total	/30

- **1**. Find the area enclosed by **ONE** loop of the daisy $r = \sin 2\theta$:

 - **d**. π
 - **e**. 2π



- **2**. Compute $\iiint \sqrt{x^2 + y^2} \ dV$ over the region *D* bounded by the paraboloid $z = 9 x^2 y^2$ and the xy-plane.
 - **a**. $2\pi 3^4$

 - **b.** $\frac{\pi}{2}3^4$ **c.** $\frac{\pi}{2}3^5$ **d.** $\frac{4\pi}{5}3^4$
 - **e**. $2\pi 3^5$



3. (10 points) Find the mass M and center of mass (\bar{x}, \bar{y}) of the region above the parabola $y = x^2$ below the line y = 9, if the density is $\rho = y$. (5 points for setup.) HINT: By symmetry, $\bar{x} = 0$. So you only need to compute \bar{y} .

