Name_____ ID_____

1-3	/15
4	/ 5
5	/10
Total	/30

MATH 251   Quiz 5   Fall 2005

Sections 503   P. Yasskin

Multiple Choice: (5 points each)

1. Compute $\int_1^2 \int_1^x y\,dy\,dx$.

    a. $-\dfrac{1}{3}$

    b. $\dfrac{1}{3}$

    c. $\dfrac{2}{3}$

    d. $\dfrac{7}{6}$
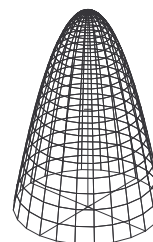
    e. $\dfrac{4}{3}$

2. Find the volume under the surface $z = 2x^2y$ above the triangle with vertices $(0,0)$, $(1,2)$ and $(0,4)$.

    a. $-\dfrac{1}{3}$

    b. $\dfrac{1}{3}$

    c. $\dfrac{2}{3}$

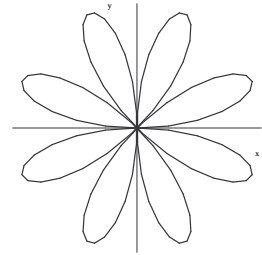   **d.** $\dfrac{7}{6}$

    e. $\dfrac{4}{3}$

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

    a. $\dfrac{4\pi}{5}3^4$

    b. $\dfrac{\pi}{2}3^4$

    c. $\dfrac{\pi}{2}3^5$

    d. $2\pi 3^4$

    e. $2\pi 3^5$

4. (5 points) Find the area enclosed by **ONE** loop
of the daisy $r = \sin 4\theta$:

5. (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 $y = 4$, if the density is $\rho = y$.
(5 points for setup.)
HINT: By symmetry, $\bar{x} = 0$. So you only need to compute $\bar{y}$.