Fake Quiz 1 Calc 3 11/29/2005

This is a fake quiz, this is *only* a fake quiz. In the event of an actual quiz, you'd have been given fair warning. Repeat: This is *only* a fake quiz.

1. Compute $\int_C (x^2+y^2)\,dx - x\,dy$ along the quarter circle from (1,0) to (0,1).

2. Evaluate $\int_C (\sin y \sinh x + \cos y \cosh x)\,dx + (\cos y \cosh x - \sin y \sinh x)\,dy$ where C is the line segment from (1,0) to $(2, \frac{\pi}{2})$.

3. Evaluate $\iint_S \mathbf{F}\cdot\mathbf{n}\,dS$, where $\mathbf{F}(x,y,z) = 4x\mathbf{i} - 3y\mathbf{j} + 7z\mathbf{k}$ and S is the surface of the cube bounded by the coordinate planes and the planes x=1, y=1, and z=1.

4. Evaluate $\iint_S \mathbf{F}\cdot\mathbf{n}\,dS$, where $\mathbf{F}(x,y,z) = x\mathbf{i} + y\mathbf{j} + 2z\mathbf{k}$ and S is the portion of the cone $z^2 = x^2 + y^2$ between the planes z = 1 and z = 2, oriented upwards.

5. Evaluate $\int_C (x^2-y)\,dx + x\,dy$, where C is the circle $x^2 + y^2 = 4$ with counterclockwise orientation..

6. Evaluate $\iint_S \langle x^3, x^2 y, xy\rangle \cdot d\mathbf{S}$, where S is the surface of the solid bounded by $z=4-x^2$, y+z=5, z=0, and y=0.

7. Compute $\int_C \mathbf{F}\cdot d\mathbf{r}$ where $\mathbf{F}(x,y,z) = y\mathbf{i} + z\mathbf{j} - x\mathbf{k}$ and C is the line segment from (1,1,1) to (-3,2,0).

8. Compute $\int_C \left\langle \ln(1+y), -\frac{xy}{1+y}\right\rangle \cdot d\mathbf{r}$ where C is the triangle with vertices (0,0), (2,0), and (0,4).

9. Evaluate $\int_{(0,1)}^{(\pi,-1)} y\sin x\,dx - \cos x\,dy$

10. Compute $\iint_S \mathbf{F}\cdot\mathbf{n}\,dS$, where $\mathbf{F}(x,y,z) = 2y\mathbf{j} + \mathbf{k}$ and S is the portion of the paraboloid $z = x^2 + y^2$ below the plane z = 4 with positive orientation.