

Math 224

Quiz 23

Name: _____

April 30, 2004

Show all work for credit.

1. Calculate the outward flux of $\mathbf{F} = \begin{bmatrix} x^2 \\ y^2 \\ x + y + z \end{bmatrix}$, where S is the boundary of a “trough” with bottom formed by the surface $z = y^2$, ends at $x = 0$ and $x = 5$, and top formed by the plane $z = 4$.