Quiz 2

1. (4 points) Compute the matrix of derivatives $Df$ for $f(x, y) = (x + y^2, \pi, \cos^2 x)$.

2. (4 points) Find all points on the graph of $f(x, y) = xy^2$ so that the tangent plane at those points are parallel to $4x + 4y = z$.

3. (4 points) Use linear approximation to find

$$\frac{e^{0.01}}{0.01 + (0.98)^2}.$$