MATH 261 Quiz 6 Name: .
Student number:

Show all work. 5 points each.

1. Use the implicit function theorem to find $\frac{dy}{dx}$ if $y\cos(x) = x^2 + y^2$.

2. Find the directional derivative of the function $f(x, y) = e^x \sin(y)$ at the point $(0, \frac{\pi}{3})$ in the direction of $\mathbf{v} = \langle -6, 8 \rangle$.