Math 335-002 * Spring 2015 * Quiz #3

1. Find the domain and range of scalar field $f(x, y) = \sqrt{e^x - y}$, and sketch its level curves $f=0, f=1, f=2$.

2. Use linearization to estimate the value of scalar field in $\mathbf{R}^3$, $f(\mathbf{r}) = \ln(2x + y - 3\sin z)$ at point $\mathbf{r} = (0.04, 1.04, 0.02)$.