2020 SPRING CALCULUS 0412: QUIZ 10 (MAY 7, 2020)

NAME: STUDENTS ID:

1. (5 points) $u = \sqrt{r^2 + s^2}$, $r = y + x\cos t$, $s = x + y\sin t$. Find $\frac{\partial u}{\partial x}$, $\frac{\partial u}{\partial y}$ and $\frac{\partial u}{\partial u}$ at $x = 1$, $y = 2$, $t = 0$.

2. (5 points) $g(u,v) = u^2 e^{-v}$. Find the directional derivative of u in the direction $v = 3i + 4j = (3,4)$ at point $(3,0)$.