NAME: (print!) _Daniel Gameiro_ **Section:** _23_

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attach-ment: q16FirstLast.pdf) ASAP BUT NO LATER THAN Nov. 2, 8:00pm

1. Compute the Jacobian of the transfomation

$$\Phi(r, s) = (rs, r + s)$$

$$J = s \cdot 1 - r \cdot 1 = s - r$$

2. Let $\mathcal{D} = \Phi(\mathcal{R})$ where $\Phi(u, v) = (u + v, v^2)$ and $R = [0, 6] \times [1, 2]$. Calculate

$$\int\int_{\mathcal{D}} y \, dA \quad .$$

(Note: it is not necessary to compute D).

$$J = 2v$$

$$\int_1^2 \int_0^6 v^2 \cdot 2v \, du\, dv = 45$$