"QUIZ" for Lecture 16

NAME: (print!) _____ **Section:** _____

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

1. Compute the Jacobian of the transfomation

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

$\begin{vmatrix} s & r \\ 1 & 1 \end{vmatrix} = s - r$

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).

$\int_1^2 \int_0^6 v^2 \, du\, dv = \frac{v^3 \cdot u}{3} \Big|_0^6 \Big|_1^2 = 14$