

You must show **all** work to receive full credit. All work is to be your own.

October 5

This is a closed books and notes test. Be organized. Total points: **20**

19:44- 19:57

1. §10.4 Evaluation of Line Integrals by Green's Theorem. Using Green's Theorem, evaluate  $\oint_C \mathbf{F}(\mathbf{r}) \cdot d\mathbf{r}$  counterclockwise around the boundary curve  $C$  of the region  $R$ , where  $\mathbf{F} = [x^2y^2, -x/y^2]$ ,  $R: 1 \leq x^2 + y^2 \leq 4$ ,  $x \geq 0$ ,  $y \geq x$ . 20 points

*Hint:* Polar coordinates:  $dA = r dr d\theta$ ,  $r \geq 0$ ,  $x = r \cos \theta$ ,  $y = r \sin \theta$