

Name: \_\_\_\_\_

- No electronic devices are allowed. You must show your work to obtain credit.
- You may use the back if necessary. Please indicate clearly if you do so.

1. (5 points) Evaluate the given integral by changing to polar coordinates:

$$\iint_R (x - y) dA,$$

where  $R$  is the region in the second quadrant enclosed by the circle  $x^2 + y^2 = 1$  and the lines  $y = 0$  and  $y = -x$ . (Possible hint: draw a picture of  $R$ )

2. (5 points) Find the volume of the solid: under the surface  $z = 1 + xy$  and above the region enclosed by  $x = y^2$  and  $x = 1$ .