

Name:

Section (circle one):      10-11      11-12

1. Does Fubini's Theorem apply to the following integrals? Why or why not? You do not need to evaluate the integrals, but you should state the conditions of Fubini's Theorem and say whatever you can about why those conditions either are or are not satisfied for each integral.

(a)  $\int_0^1 \int_0^1 \frac{1}{x+y} dx dy$

(b)  $\int_0^1 \int_0^1 \frac{\sin(x+y)}{x+y} dx dy$

2. Find the volume of the solid under the surface  $z = xy^2$  and above the region bounded by  $y = x^2$  and  $x = y^2$ .