Quiz 8, MAT128, Fall 2015   Name: ⎯⎯⎯⎯⎯

a. Whose theorem allows us to switch the order of integration, provided the integrand is sufficiently well-behaved?

b. What is the area element dA in rectangular coordinates, and what is it in polar coordinates? (Draw it in both cases.)

c. Write an integral equivalent to

$$\iiint_R f(x,y,z)\,dV = \int_0^1 \int_{\sqrt{x}}^1 \int_0^{1-y} f(x,y,z)\,dz\,dy\,dx$$

only integrating in the order $dz\,dx\,dy$, for the region R given in the following figure: