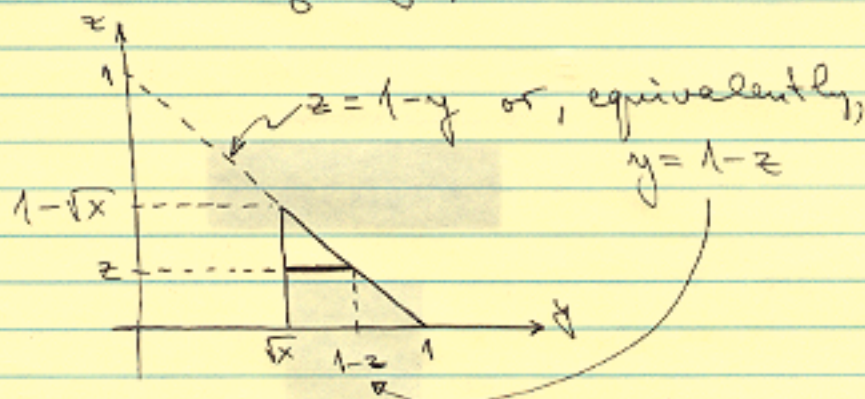


$$I_2 = \int_0^1 dx \int_0^{1-\sqrt{x}} dy \int_0^{1-\sqrt{x}} dz f(x, y, z).$$



For a given $z \in [0, 1 - \sqrt{x}]$, the allowed range for y is $[\sqrt{x}, 1 - z]$, so the integral becomes

$$I_2 = \int_0^1 dx \int_0^{1-\sqrt{x}} dz \int_{\sqrt{x}}^{1-z} dy f(x, y, z).$$

3) Now I will take z to be the "outside" variable, and will write the integral in the form

$$I_3 = \int dz \int dy \int dx f(\dots).$$

The variable z takes all values between 0 and 1, so

$$I_3 = \int_0^1 dz \int dy \int dx f.$$

For a fixed value of $z \in [0, 1]$, we have