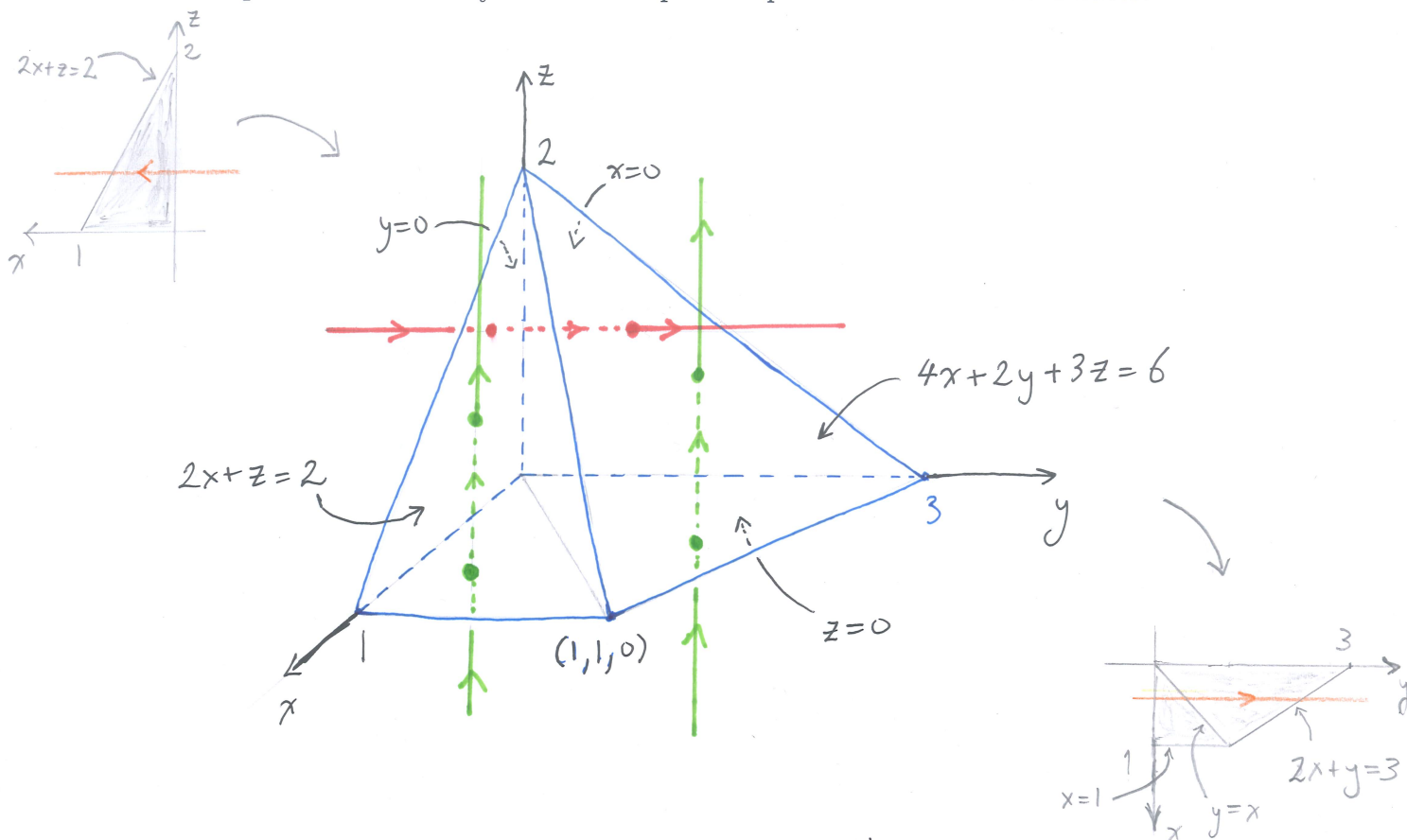**2.** Consider the iterated integral:

$$I = \int_0^2 \int_0^{1-\frac{1}{2}z} \int_0^{3-2x-\frac{3}{2}z} f(x,y,z)\,dy\,dx\,dz$$

a. The iterated integral I corresponds to a triple integral

$$\iiint_E f(x,y,z)\,dV$$

where E is a region in space. Draw a picture of the region E, and clearly label the surfaces bounding it with their equations and clearly label the important points with their coordinates.

b. Express the iterated integral I in terms of iterated integrals with the order of integration $dz\,dy\,dx$.

$$I = \int_0^1 \int_0^x \int_0^{2-2x} f(x,y,z)\,dz\,dy\,dx + \int_0^1 \int_x^{3-2x} \int_0^{2-\frac{4}{3}x-\frac{2}{3}y} f(x,y,z)\,dz\,dy\,dx$$