Exercise 1. Suppose we have a triangular plate at the bottom of a pool. It is enclosed by the following curves:

$$\{y=x,\ y=2-x,\ y=0\}.$$

Suppose that the pool contains a fluid of density $\rho=1$ and the full depth of the pool is 10 m. Do the following:

i) Make a diagram which illustrates the situation described above. Highlight the enclosed region formed by the curves to show that that is the plate.
ii) Express the pressure as an integral. [`Remember: Pressure is the integral of depth times width times the density.`]

Exercise 2. Consider the region in the 1st quadrant enclosed by the curves

$$\{x=1,\ x=2,\ y=x,\ y=x+2\}.$$

If we rotate the region about the axis $y=-1$ we obtain a solid of revolution.

i) Sketch the region in question and make a rough sketch of how the solid of revolution looks like.
ii) Use the method of rings to find the volume of the solid.