MATH 253 – WORKSHEET 30
TRIPLE INTEGRALS AND APPLICATIONS

(1) Consider the iterated integral $\int_{x=0}^{x=1} \mathrm{d}x \int_{y=\sqrt{x}}^{y=1} \mathrm{d}y \int_{z=0}^{z=1-y} \mathrm{d}z\, f$. Write the other 5 equivalent integrals coming from changing the order of integration.

(2) Find the volume and the center-of-mass of the solid bounded by the parabolic cylinder $y = x^2$, the xy plane, and the plane $y + z = 1$.