Worksheet: Integral applications

Do these calculations with a group, if possible.

A. (*§2.5 #250*) How much work is required to pump-out a swimming pool if the area of the base is 800 ft^2, the water is 4 ft deep, and the top of the pool is 1 foot above the water level? (*Assume that the density of water is* $62\,lb/ft^3$.)

B. (*§2.6 #279*) Find the center of mass $(\bar{x}, \bar{y})$ of the region bounded by $y = x^2$ and $y = x^4$ in the first quadrant. Start by sketching the region.