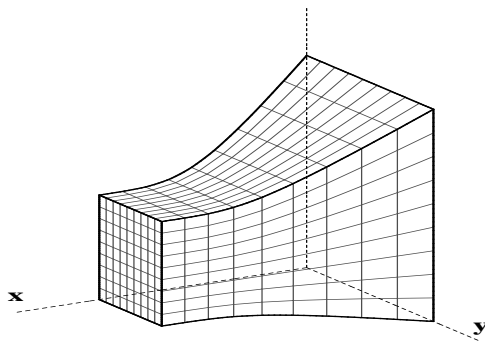


6. (15 pts.) Consider the region in the x, y plane bounded by the graph of $y = (1 + (2 - x)^4)^{1/4}$, the x -axis, and the lines $x = 0$ and $x = 2$.



- (a) Write an integral giving the value of the volume of the solid whose base is the given region and whose cross-sections perpendicular to the x -axis are squares. (A three-dimensional view of the solid is presented in the figure.)

- (b) Explain how Riemann sum approximations of your integral are related to approximations of the volume of the solid.

- (c) Find, as accurately as you can, the value of the volume of the solid described in part (a). Explain how you computed your answer.