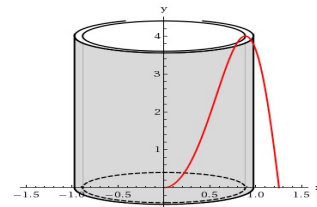
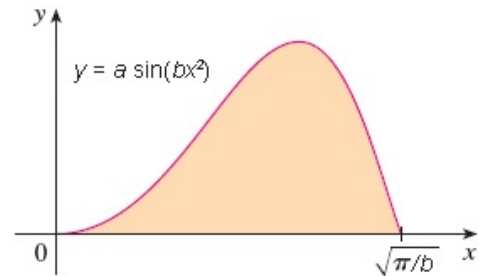


DIRECTIONS To receive full credit, you must provide complete legible solutions to the following problems in the space provided. Transfer all your answers to the space provided on the test paper. A set up includes a graph of the region, choice of a differential strip, the volume element and an expression for the volume elements including limits.

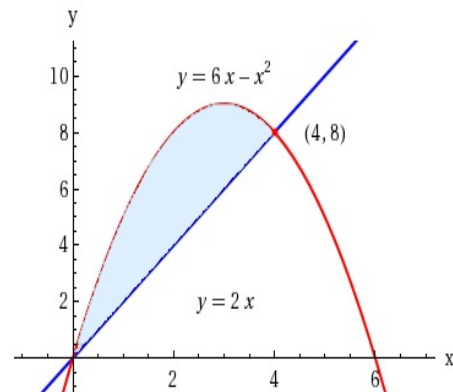
1. Set up an integral for the volume of solid that results from rotating about the y axis the region bounded by the curve and the axis as shown, then find the exact value of the volume of solid. Take $a = 4$, and $b = 2$.



2. Set up an integral for the volume of solid that results from rotating about the y axis the region bounded by the curves, then find the exact value of the volume of solid.

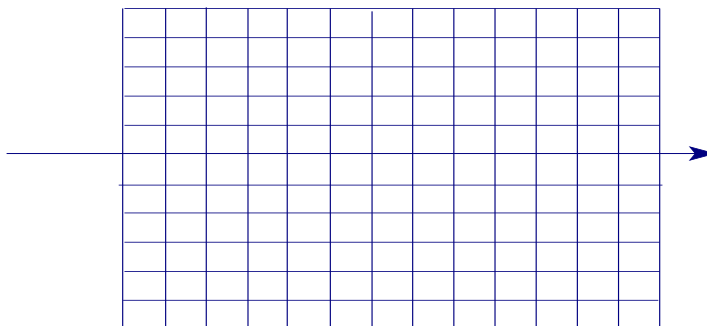
Ans _____

$$y = 6x - x^2, y = 2x$$



3. Use the method of cylindrical shells to find the volume V of the solid obtained by rotating the region bounded by the given curves about the x -axis.

$$x + y = 3, \quad x = 4 - (y - 1)^2$$



4. Use the method of cylindrical shells to find the volume V generated by rotating the region bounded by the given curves about $y = 8$.

$$8y = x^3, \quad y = 0, \quad x = 4$$

Ans _____

