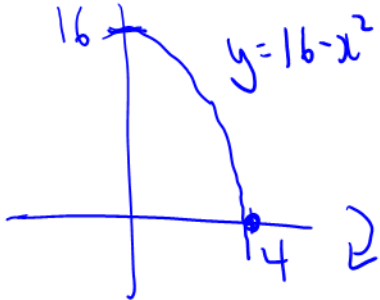


Name: \_\_\_\_\_

Revolve the first-quadrant region bounded by  $y = 16 - x^2$  about the  $x$ -axis.  
Find the volume (~~using disks or shells~~) using the disk method.



$$dV = \pi (\text{radius})^2 \cdot \text{thickness}$$

$$= \pi y^2 dx$$

$$V = \pi \int_0^4 y^2 dx$$

$$= \pi \int_0^4 (16 - x^2)^2 dx$$

$$= \pi \int_0^4 (256 - 32x^2 + x^4) dx$$

$$= \pi \left[ 256x - \frac{32x^3}{3} + \frac{x^5}{5} \right]_0^4$$

$$\approx 546.13 \pi$$