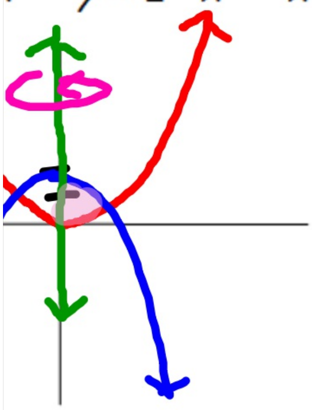
the graphs, shade the bounded region, draw a typical shell, set up the integral t
e volume, and calculate the volume.

x^2 $\quad y = 2 - x^2 \quad x = 0$ (region in the 1st quadrant) rotated about the y-a



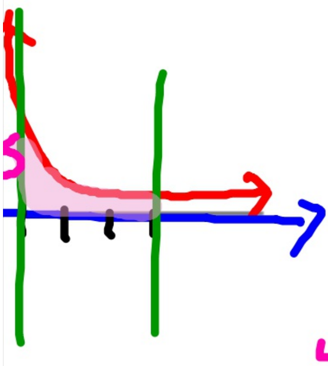
$-x^2$

Area: TB
Rot: RL

$$\int 2\pi r(\overset{T-B}{\text{height}})$$

$$\int_0^1 2\pi x\left(2-x^2-x^2\right)dx = \boxed{3.142\,u^3}$$

$y=0 \quad x=1 \quad and \quad x=4$ - about the y-axis



Area: TB

Rot: RL

$\int 2\pi x(T-B)$

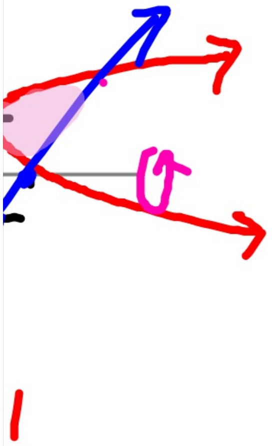
$\int_1^4 2\pi x(x^{-1/2}-0)\,dx$

$\int_1^4 2\pi x^{\frac{1}{2}}\,dx$

$\frac{4\pi}{3}x^{\frac{3}{2}}\Big|_1^4 = \boxed{29.322u^3}$

$-1)^2$ *and* $x = y + 1$ - about the x-axis

$x - 1 = y$



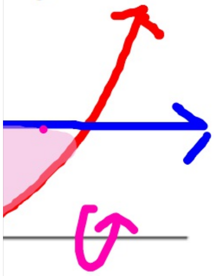
Area: RL

Rot: TB

$\int 2\pi y (R - L)$

$\int_0^3 2\pi y\left((y+1) - (y-1)^2\right) dy = \boxed{42.412u}$

$y = 4$ *and* $x = 0$ (region in the 1st quadrant) rotated about the x



Area: TB or RL

Rot: TB

Option A - TB

$$\int_0^2 \pi\left(4^2 - (x^2)^2\right)dx$$

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

$$\boxed{80.425u^3}$$

Option B - RL

$$\int 2\pi y\,(R - L)$$

$$\int_0^4 2\pi y\left(\sqrt{y} - 0\right)dy$$

$$\boxed{80.425u^3}$$