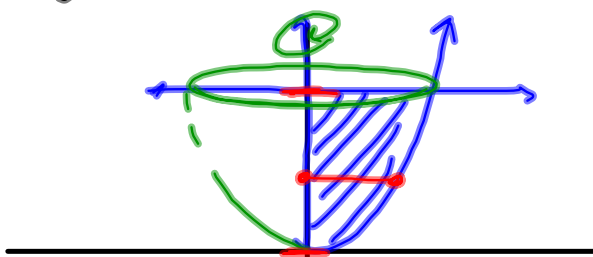


7.3.2

1. $y = x^2$, $x = 0$ $y = 4$ about $x = 0$
 $x = \sqrt{y}$



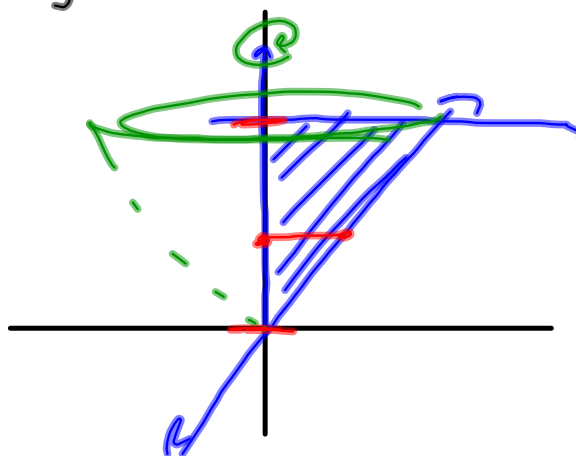
$$V = \pi \int_0^4 (\sqrt{y})^2 dy$$
$$= \pi \int_0^4 y dy = \pi \left(\frac{1}{2} y^2 \right) \Big|_0^4 = \frac{\pi}{2} (4^2 - 0^2) = 8\pi$$

2. $y=2x$ $x=0$ $y=6$ about $x=6$
 $x = \frac{y}{2} = \frac{1}{2}y$

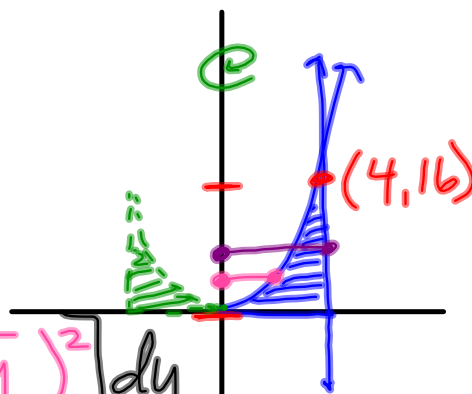
$$V = \pi \int_0^6 \left(\frac{1}{2}y\right)^2 dy$$

$$\frac{\pi}{4} \int_0^6 y^2 dy$$

$$\frac{\pi}{4} \left(\frac{1}{3}y^3\right) \Big|_0^6 = \frac{\pi}{12} (6^3 - 0^3) = \frac{216\pi}{12} = 18\pi$$



3. $y = x^2$ $x = 4$ $y = 0$ about $x = 0$
 $x = \sqrt{y}$

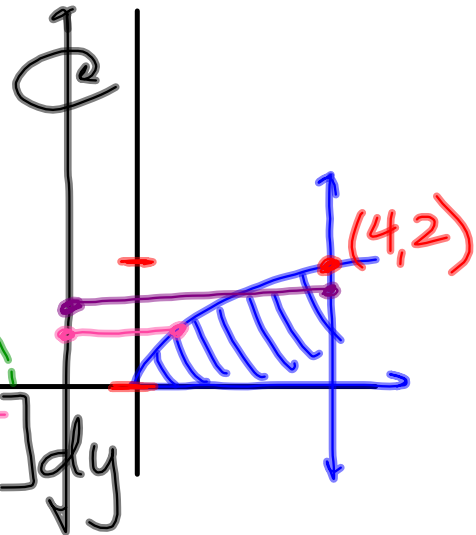


$$V = \pi \int_0^{16} [(4)^2 - (\sqrt{y})^2] dy$$

$$\pi \int_0^{16} (16 - y) dy$$

⋮

4. $y = \sqrt{x}$ $y = 0$ $x = 4$ about $x = -2$
 $x = y^2$



$$V = \pi \int_0^2 [(4 - (-2))^2 - (y^2 - (-2))^2] dy$$

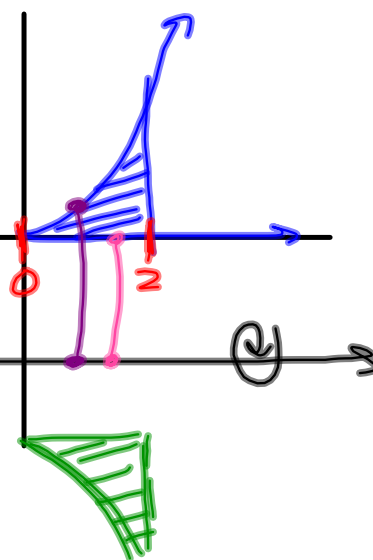
$$\pi \int_0^2 [6^2 - (y^2 + 2)^2] dy$$

⋮

5. $y = x^2$ $y = 0$ $x = 2$ about $y = -2$

$$V = \pi \int_0^2 [(x^2 + 2)^2 - (2)^2] dx$$

⋮



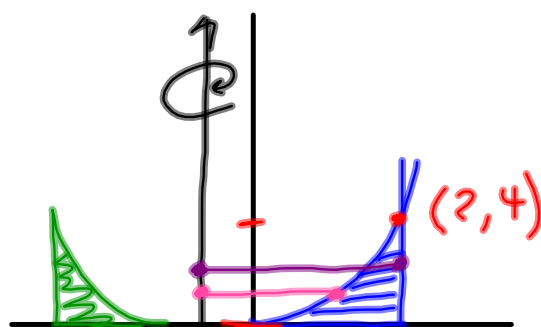
6. $y=x^2$ $y=0$ $x=2$ about $y=4$

$$V = \pi \int_0^2 [(4)^2 - (4 - x^2)^2] dx$$

⋮



7. $y = x^2$ $y = 0$ $x = 2$ about $x = -1$
 $x = \sqrt{y}$



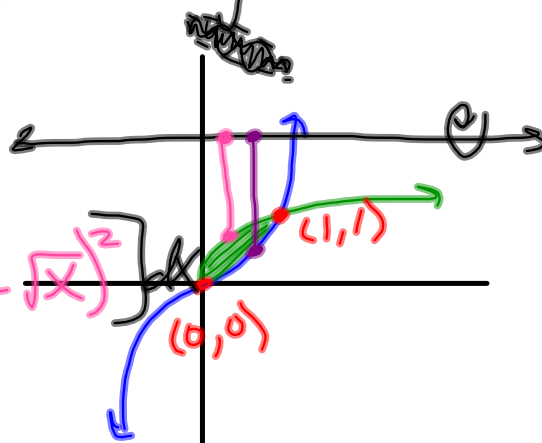
$$V = \pi \int_0^4 \left[(2 - (-1))^2 - (\sqrt{y} - (-1))^2 \right] dy$$

$$\pi \int_0^4 \left[3^2 - (\sqrt{y} + 1)^2 \right] dy$$

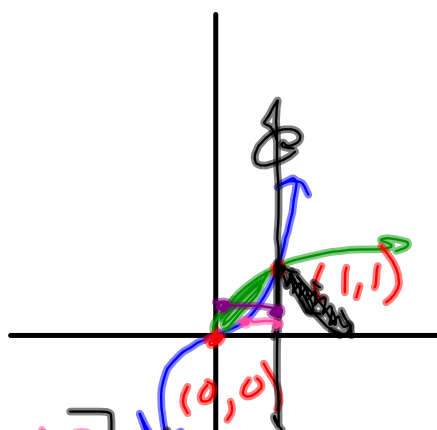
⋮

8. $y = x^3$ $y = \sqrt{x}$ about $y = 2$

$$V = \pi \int_0^1 [(2 - x^3)^2 - (2 - \sqrt{x})^2] dx$$



9. $y = x^3$ $y = \sqrt{x}$ about $x = 1$
 $x = \sqrt[3]{y}$ $x = y^2$



$$V = \pi \int_0^1 [(1 - y^2)^2 - (1 - \sqrt[3]{y})^2] dy$$

⋮