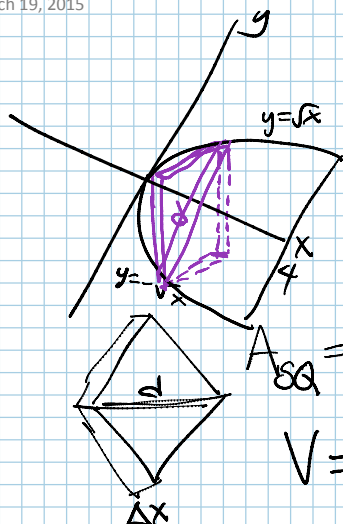


3



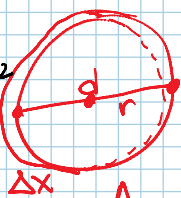
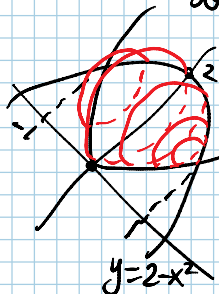
$$d = \sqrt{x} - (-\sqrt{x}) = 2\sqrt{x}$$

$$A_{sq} = \frac{1}{2}d^2 = \frac{1}{2}(2\sqrt{x})^2 = 2x$$

$$V = \int_0^4 2x dx = x^2 \Big|_0^4 = 4^2 - 0^2 = \boxed{16}$$

$$Vol = A_{sq} \cdot \Delta x$$

4



$$d = 2 - x^2 - x^2$$

$$d = 2 - 2x^2 \quad r = 1 - x^2$$

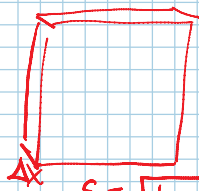
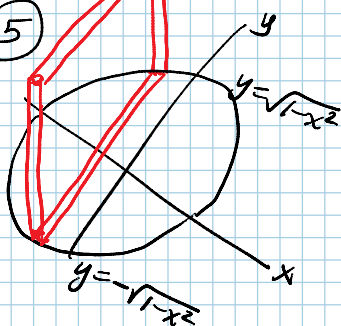
$$A_0 = \pi r^2 = \pi(1 - x^2)^2 = \pi(1 - 2x^2 + x^4)$$

$$V = A_0 \cdot \Delta x = \pi(x^4 - 2x^2 + 1) \Delta x$$

$$V = \pi \int_{-1}^1 (x^4 - 2x^2 + 1) dx = \pi \left[\frac{1}{5}x^5 - \frac{2}{3}x^3 + x \right] \Big|_{-1}^1 = \pi \left(\frac{1}{5} - \frac{2}{3} + 1 \right) - \pi \left(-\frac{1}{5} + \frac{2}{3} - 1 \right)$$

$$= \boxed{\frac{16}{15} \pi}$$

5



$$s = \sqrt{1-x^2} - (-\sqrt{1-x^2})$$

$$s = 2\sqrt{1-x^2}$$

$$A_{sq} = s^2 = (2\sqrt{1-x^2})^2 = 4(1-x^2) = 4 - 4x^2$$

$$V = (4 - 4x^2) \Delta x$$

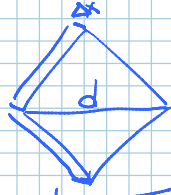
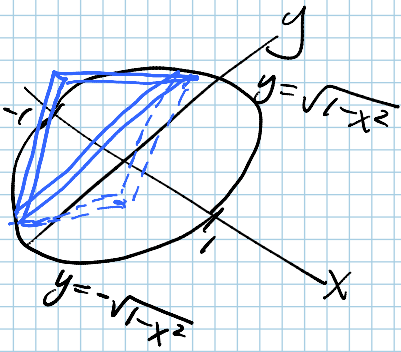
$$V = \int_{-1}^1 (4 - 4x^2) dx = \left[4x - \frac{4}{3}x^3 \right] \Big|_{-1}^1 = 4(1) - \frac{4}{3}(1)^3 - (4(-1) - \frac{4}{3}(-1)^3)$$

$$= 4 - \frac{4}{3} + 4 - \frac{4}{3} = \boxed{\frac{16}{3}}$$

6

g

⑥



$$d = \sqrt{1-x^2} - (-\sqrt{1-x^2}) = 2\sqrt{1-x^2}$$

$$A_{\text{sq}} = \frac{1}{2}d^2 = \frac{1}{2}(2\sqrt{1-x^2})^2 = 2(1-x^2) = 2-2x^2$$

$$V = (2-2x^2)\Delta x$$

$$V = \int_{-1}^1 (2-2x^2) dx = \left[2x - \frac{2}{3}x^3 \right]_{-1}^1 = 2(1) - \frac{2}{3}(1)^3 - \left(2(-1) - \frac{2}{3}(-1)^3 \right) \\ = 2 - \frac{2}{3} + 2 - \frac{2}{3} = \frac{8}{3}$$