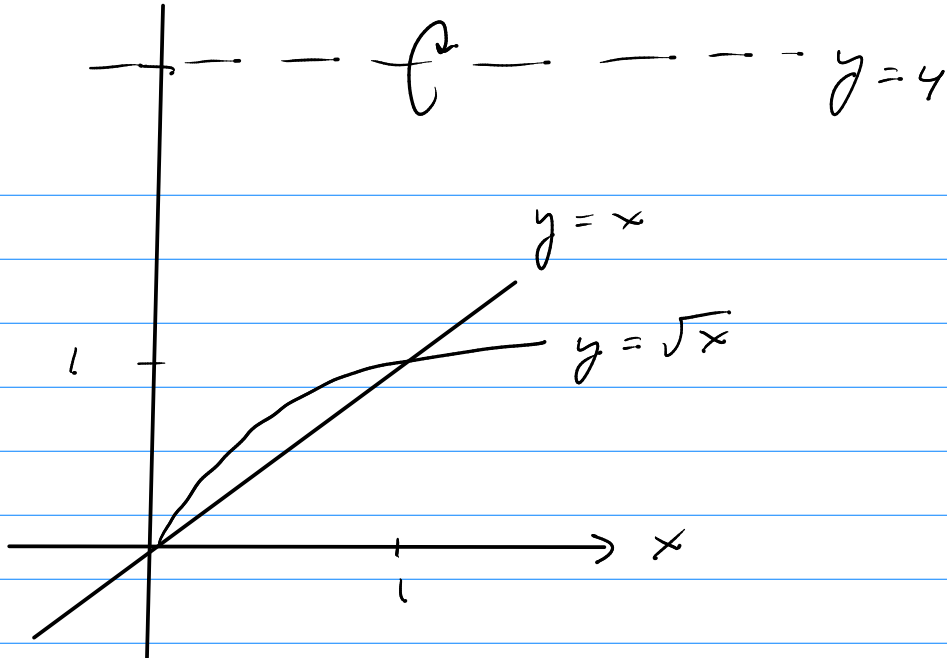


2A



$$\text{Vol} = \int_0^1 \pi \left[(4-x)^2 - (4-\sqrt{x})^2 \right] dx$$

$$= \pi \int_0^1 \left[(16 - 8x + x^2) - (16 - 8\sqrt{x} + x) \right] dx$$

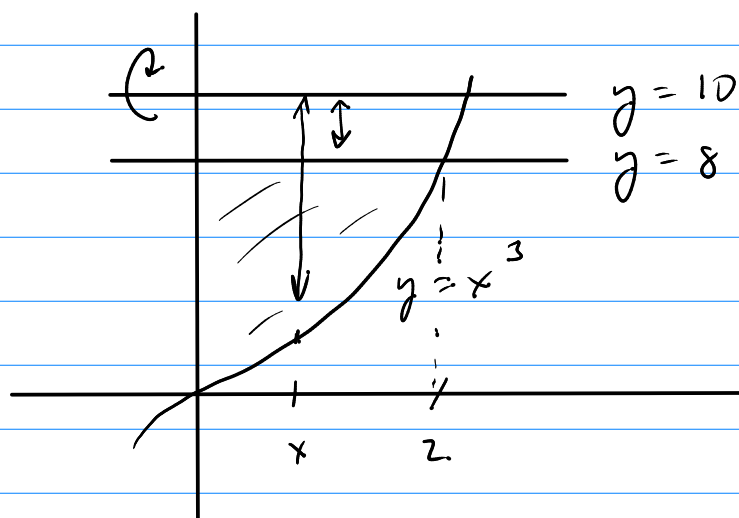
$$= \pi \int_0^1 (x^2 - 9x + 8\sqrt{x}) dx = \pi \left[\frac{x^3}{3} - \frac{9x^2}{2} + \frac{16x^{3/2}}{3} \right] \Big|_0^1$$

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$$= \pi \left(\frac{1}{3} - \frac{9}{2} + \frac{16}{3} \right)$$

$$= \frac{7\pi}{6}$$

2B



1pt

4pts

$$\int_0^2 \pi \left[(10 - x^3)^2 - 2^2 \right] dx$$

$$= \pi \int_0^2 (96 - 20x^3 + x^6) dx$$

5pts

$$= \pi \left(96x - 5x^4 + \frac{1}{7}x^7 \right) \Big|_0^2 = \pi \left(192 - 5 \cdot 2^4 + \frac{1}{7}2^7 \right)$$