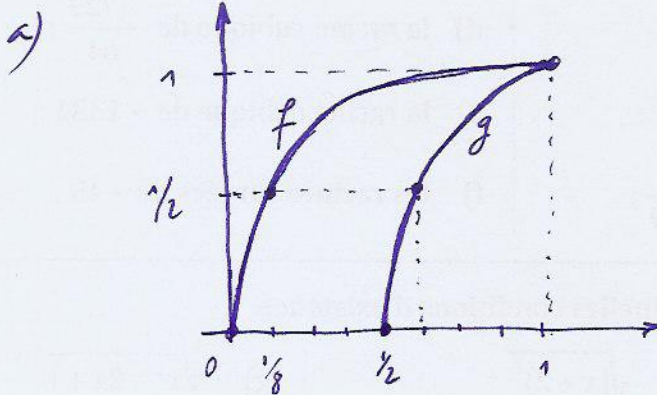


6

$$f(x) = \sqrt[3]{x} \quad \text{et} \quad g(x) = \sqrt{2x-1}$$



b)

$$V_1 = \pi \int_0^1 (\sqrt[3]{x})^2 dx = \pi \int_0^1 x^{\frac{2}{3}} dx$$

$$= \pi \cdot \left[\frac{x^{\frac{5}{3}}}{\frac{5}{3}} \right]_0^1 = \frac{3\pi}{5} \text{ (uv)}$$

c)

$$V_2 = \pi \int_{1/2}^1 (2x-1) dx = \pi \cdot \left[x^2 - x \right]_{1/2}^1$$

$$= \pi \cdot \left[0 - \left(\frac{1}{4} - \frac{1}{2} \right) \right] = \frac{\pi}{4} \text{ (uv)}$$

d)

$$V = V_1 - V_2 = \frac{3\pi}{5} - \frac{\pi}{4} = \frac{7\pi}{20} \text{ (uv)}$$