$y^2 = 2x \rightarrow y = \sqrt{2x}$

$x^2 = 2y \rightarrow y = \dfrac{x^2}{2}$

limites da integral: $\left(\dfrac{x^2}{2}\right)^2 = 2x$

$$\dfrac{x^4}{4} = 2x \rightarrow x^4 - 8x = 0$$

$$x(x^3 - 8) = 0$$

$\sqrt{2x} \geq \dfrac{x^2}{2}$ no intervalo de 0 a 2.

$x = 0, \quad x = \sqrt[3]{8} = 2$

$$A = \int_a^b f(x)\,dx - \int_a^b g(x)\,dx$$

$$A = \int_0^2 \sqrt{2x}\,dx - \int_0^2 \dfrac{x^2}{2}\,dx = \int_0^2 (2x)^{1/2}\,dx - \int_0^2 \dfrac{x^2}{2}\,dx$$

$$\sqrt{2}\int_0^2 x^{1/2}\,dx - \dfrac{1}{2}\int_0^2 x^2\,dx = \left(\sqrt{2}\,\dfrac{x^{3/2}}{3/2}\right)\Big|_0^2 - \left(\dfrac{x^3}{6}\right)\Big|_0^2$$

$$= \dfrac{2\sqrt{2}}{3} x^{3/2}\Big|_0^2 - \dfrac{x^3}{6}\Big|_0^2 = \left(\dfrac{2\sqrt{2} \cdot 2^{3/2}}{3} - \dfrac{2\sqrt{2} \cdot 0^{3/2}}{3}\right) - \left(\dfrac{2^3}{6} - \dfrac{0^3}{6}\right)$$

$$= \left(\dfrac{2\sqrt{2}\,\sqrt{2}^3}{3} - 0\right) - \left(\dfrac{8}{6} - 0\right) = \dfrac{2\sqrt{2}^4}{3} - \dfrac{8}{6}$$

$$= \dfrac{2 \cdot 4}{3} - \dfrac{8}{6} = \dfrac{8}{3} - \dfrac{8}{6} = \dfrac{48 - 24}{18} = \dfrac{24}{18} = \dfrac{4}{3}\ u.a. \ //$$