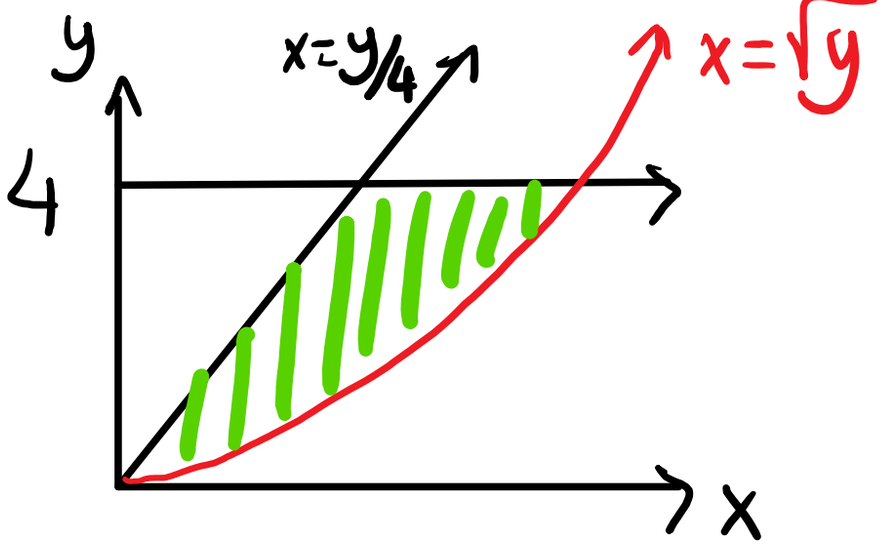
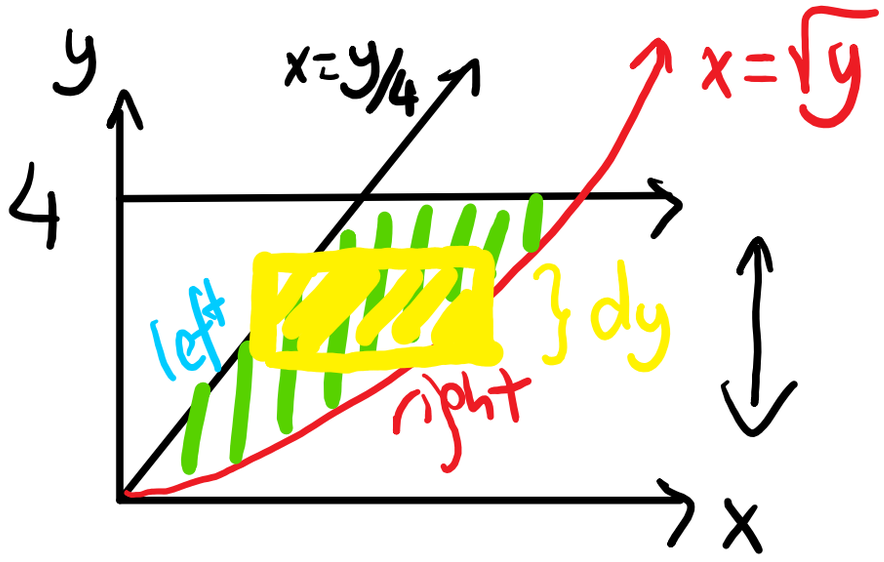
Supplementary Q on Regions Between Curves

Determine the area of the shaded region in the figure:



Use horizontal strips since the f. are as $x = F(y)$..



$$\int_0^4 \left(\sqrt{y} - \frac{y}{4}\right) dy = \left(\frac{y^{3/2}}{3/2} - \frac{y^2}{8}\right)\Bigg|_0^4$$

$$= \left(\left(\frac{2}{3}\cdot(2^2)^{3/2} - \frac{4^2}{8}\right) - \left(0 - 0\right)\right) = \frac{2}{3}\cdot 2^3 - \frac{16}{8}$$

$$= \frac{16}{3} - \frac{2}{1} \quad (3) \quad = \frac{10}{3}$$