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Find the intersection points

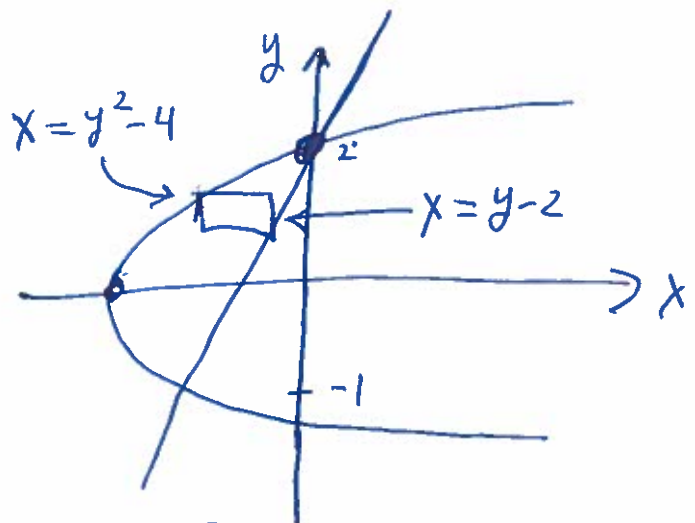
$$y-2+4=y^2$$

$$0=y^2-y-2$$

$$0=(y-2)(y+1)$$

$$y=2 \quad x=0$$

$$y=-1 \quad x=-3$$



$$\text{Area} = \int_{-1}^2 (y-2 - (y^2-4)) dy = \int_{-1}^2 (y+2-y^2) dy$$

$$= \left( \frac{y^2}{2} + 2y - \frac{y^3}{3} \right) \Big|_{-1}^2 = \boxed{2+4 - \frac{8}{3} - \left( \frac{1}{2} - 2 + \frac{1}{3} \right)}$$