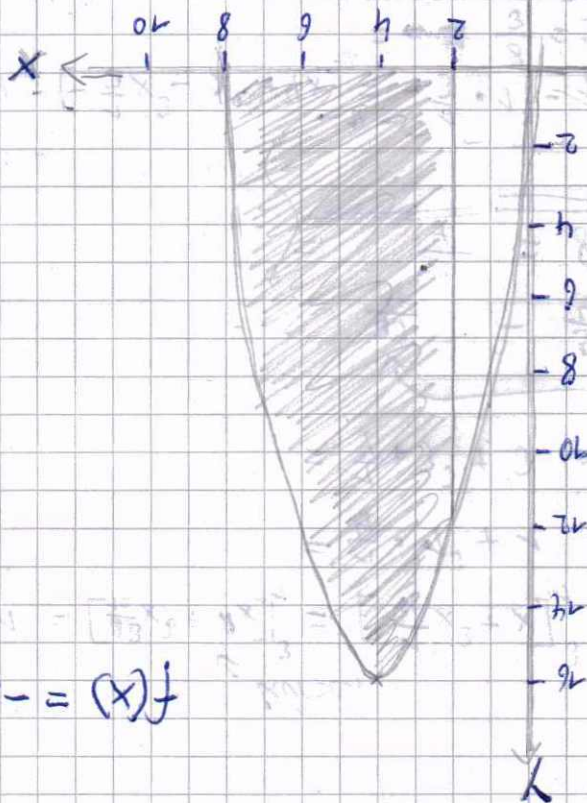


$$f(x) = -x^2 + 8x$$



$$\int_0^8 f(x) dx = \int_0^8 (-x^2 + 8x) dx = -\frac{1}{3}x^3 + 4x^2 \Big|_0^8 = -\frac{1}{3}(8^3) + 4(8^2) = -\frac{512}{3} + 256 = \frac{256}{3}$$

$$= \left(-\frac{1}{3} \cdot 8^3 + \frac{2}{8} \cdot 8^2 \right) - \left(-\frac{1}{3} \cdot 0^3 + \frac{2}{8} \cdot 0^2 \right) = -\frac{512}{3} + 256 = \frac{256}{3}$$

$$= 79$$