

$$b) \int_0^4 f(x) dx = 2 + 8 \ln 5$$

$$f(x) = \frac{1}{2}x - \frac{1}{2} + \frac{8}{x+1}$$

$$\int_0^4 \left(\frac{1}{2}x - \frac{1}{2} + \frac{8}{x+1} \right) dx$$

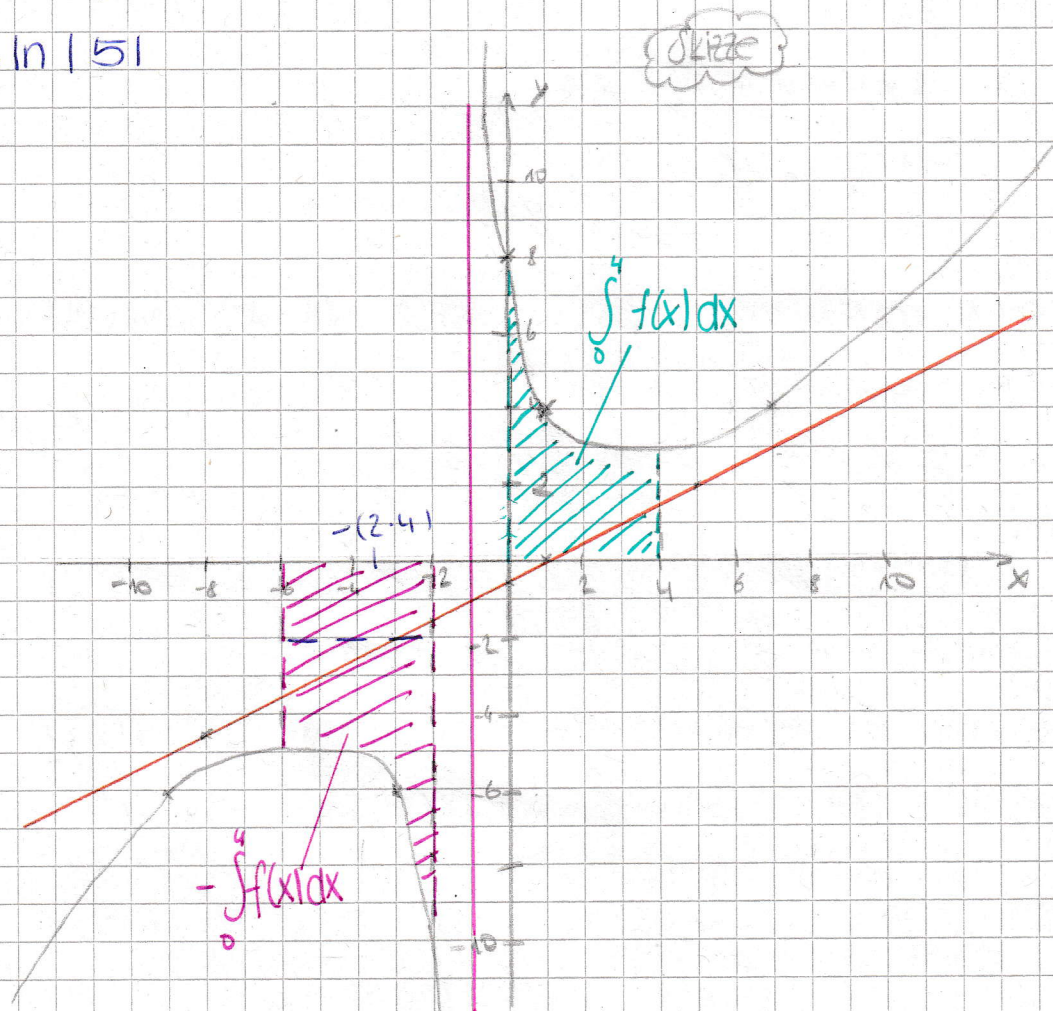
$$= \left[\frac{1}{4}x^2 - \frac{1}{2}x + 8 \ln|x+1| \right]_0^4$$

$$= \left(\frac{1}{4} \cdot 4^2 - \frac{1}{2} \cdot 4 + 8 \ln|4+1| \right) - \left(\frac{1}{4} \cdot 0^2 - \frac{1}{2} \cdot 0 + 8 \ln|0+1| \right)$$

$$= (4 - 2 + 8 \ln|4+1|) - (8 \ln|1|)$$

$$= (2 + 8 \ln|5|) - 0$$

$$= 2 + 8 \ln|5|$$



$$\int_{-6}^{-2} f(x) dx = - \left(\int_0^4 f(x) dx + 2 \cdot 4 \right)$$

$$\int_{-6}^{-2} f(x) dx = -(2 + 8 \ln 5 + 8)$$

$$\int_{-6}^{-2} f(x) dx = -10 - 8 \ln 5$$