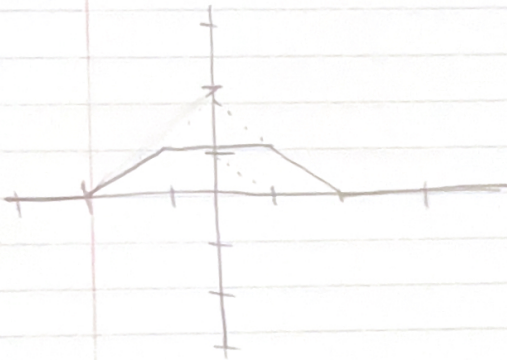


## Homework 6

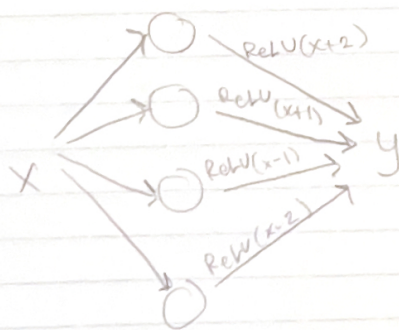
1).

$$f(x) = \begin{cases} 0 & x < -2 \\ x+2 & -2 \leq x \leq -1 \\ 1 & -1 \leq x \leq 1 \\ 2-x & 1 \leq x \leq 2 \\ 0 & x \geq 2 \end{cases}$$



$$\text{Trap}(x) = \text{ReLU}(x+2) + 1 + \text{ReLU}(x-2)$$

$$\text{Trap}(x) = \text{ReLU}(x+2) - \text{ReLU}(x+1) - \text{ReLU}(x-1) + \text{ReLU}(x-2)$$



$$y = W_1^{[2]} \text{ReLU}(x+2) + W_2^{[2]} \text{ReLU}(x+1) + W_3^{[2]} \text{ReLU}(x-1) + W_4^{[2]} \text{ReLU}(x-2)$$

$$W_1^{[2]} = 1 \quad W_2^{[2]} = -1 \quad W_3^{[2]} = -1 \quad W_4^{[2]} = 1$$