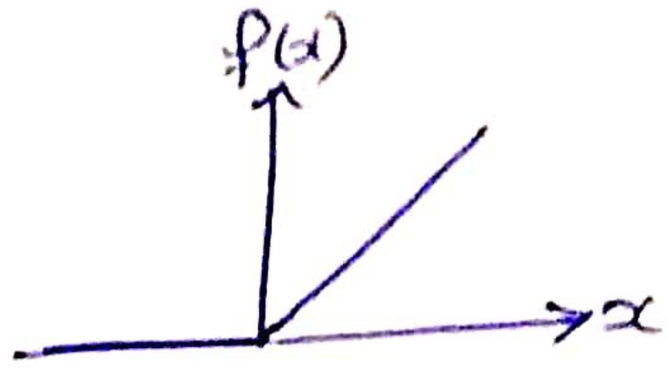
Inline Question 1

⇒ SVM loss function is not strictly speaking differentiable.



$$\text{Let } f(x) = \begin{cases} Kx & \forall x > 0 \\ 0 & \forall x \leq 0 \end{cases}$$

When $x = 0^+$, $\frac{\partial f}{\partial x} = K$ {Analytic}

$h = 0.01$ $\quad \frac{\Delta f}{\Delta x} = \frac{f(0.01) - f(-0.01)}{2 \times 0.01} = \frac{K * 0.01}{2 * 0.01} = K/2$

{Numerical}

Inline Question 2

Visualized SVM weights look like, it captures the class look averaged in all the examples.

{Ex: horse with face in both direction is captured}