



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

$$F(x) = \begin{cases} 0, & x \leq -1 \\ 1, & x \geq 1 \end{cases}$$

$$-1 \leq x \leq 0 \quad f(x) = 1+x$$

$$F(x) = x + \frac{x^2}{2} + C$$

$$F(-1) = -1 + \frac{1}{2} + C = 0$$

$$-\frac{1}{2} + C = 0$$

$$C = \frac{1}{2}$$

$$F(x) = \frac{1}{2} + x + \frac{x^2}{2} = \frac{1}{2}(1+x)^2$$

$$0 \leq x \leq 1 \quad f(x) = 1 - x$$

$$F(x) = \int_0^x (1 - t) dt = x - \frac{x^2}{2} + C$$

$$F(x) = 1 - \frac{1}{2} + C = 1$$

$$C = \frac{1}{2}$$

$$F(x) = \frac{1}{2} + x - \frac{x^2}{2} = 1 - \frac{1}{2}(1-x)^2$$

$$F(x) = \begin{cases} 0 & , & x \leq -1 \\ \frac{1}{2}(1+x)^2 & , & -1 \leq x \leq 0 \\ 1 - \frac{1}{2}(1-x)^2 & , & 0 \leq x \leq 1 \\ 1 & , & 1 \leq x \end{cases}$$