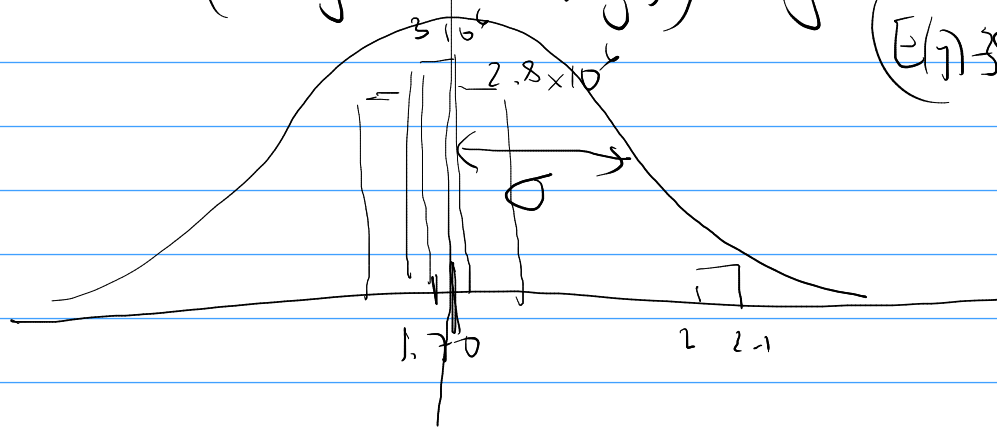


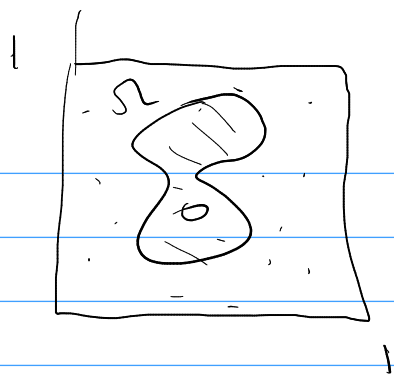
$$\langle f, g \rangle = \int_I f(x) g(x) \omega(x) dx \quad f, g \in \overline{\Pi}_m$$

$$\langle f, g \rangle_1 = \int_I \left[f(x) g(x) + f'(x) g'(x) \right] \omega(x) dx$$



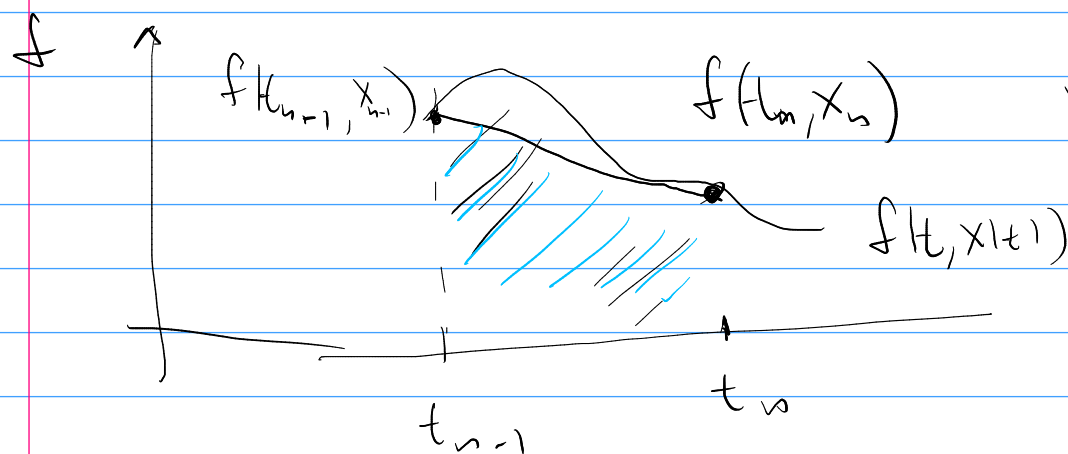
$$Q(f) = \sum \left(f(x_j) + f'(x_j) \right) w_j \quad (E(\gamma) - 3\sigma, E(\gamma) + 3\sigma) \rightarrow 98\%$$





$$\begin{array}{c}
 \downarrow U[0,1] \\
 \left. \begin{array}{l} (x_1, y_1) \\ (x_2, y_2) \\ \vdots \\ (x_n, y_n) \end{array} \right\} \begin{array}{l} (x_1, y_1) \\ (x_s, y_s) \\ \vdots \\ (x_{n-1}, y_{n-1}) \end{array} \\
 \uparrow \\
 \Omega
 \end{array}$$

$$\frac{1}{\#\{(x_i, y_i) \in \Omega\}} \sum_{(x_i, y_i) \in \Omega} f(x_i, y_i) \longrightarrow \frac{1}{|\Omega|} \int_{\Omega} f(x, y) dx dy$$



x_n desconocido

$$x(t_n) = x(t_{n-1}) + \int_{t_{n-1}}^{t_n} f(t, x(t)) dt$$