$$l_j(t) = \frac{\prod_{k=1, k\neq j}^{n} (t - t_k)}{\prod_{k=1, k\neq j}^{n} (t_j - t_k)}$$

$$P_{n-1}(t) = y_1 l_1(t) + y_2 l_2(t) + \cdots + y_n l_n(t)$$

$$P_1(t) = y_1 l_1(t) + y_2 l_2(t)$$

$$P_2(t) = y_1 \frac{(t-t_2)(t-t_3)}{(t_1-t_2)(t_1-t_3)} + y_2 \frac{(t-t_1)(t-t_3)}{(t_2-t_1)(t_2-t_3)} + y_3 \frac{(t-t_1)(t-t_2)}{(t_3-t_1)(t_3-t_2)}$$

$$y_{k+1} = y_k + \int_{t_k}^{t_{k+1}} f(t, y(t))\, dt \approx \int_{t_k}^{t_{k+1}} P(t)\, dt$$

$$v_{n+1} = v_n + \frac{h}{2}\left[f(t_{n+1}, v_{n+1}) + f(t_n, v_n)\right]$$