$$P(X) = \frac{(X-X_2)(X-X_3)}{(X_1-X_2)(X_1-X_3)} Y_1$$

$$+ \frac{(X-X_1)(X-X_3)}{(X_2-X_1)(X_2-X_3)} Y_2$$

$$+ \frac{(X-X_1)(X-X_2)}{(X_3-X_1)(X_3-X_2)} Y_3$$

$$Y_{12} = FLINE(X1, Y1, X2, Y_2, X)$$

$$= \frac{(Y_1(X_2-X)+Y_2(X-X_1))}{(X_2-X_1)}$$

$$Y_{23} = FLINE(X_2, Y_2, X_3, Y_3, X)$$

$$= \frac{(Y_2(X_3-X)+Y_3(X-X_2))}{(X_3-X_2)}$$

$$Y_{123} = FLINE(X_1, Y_{12}, X_3, Y_{23}, X)$$

$$= \frac{(Y_{12}(X_3-X)+Y_{23}(X-X_1))}{(X_3-X_1)}$$

$$Y_{123} = \left[\frac{Y_1(X_2-X)+Y_2(X-X_1)}{(X_2-X_1)(X_3-X_1)}\right](X_3-X)$$

$$+\left[\frac{Y_2(X_3-X)+Y_3(X-X_2)}{(X_3-X_2)(X_3-X_1)}\right](X-X_1)$$

$$Y_{123} = \left[\frac{Y_1(X_2-X)+Y_2(X-X_1)}{(X_2-X_1)(X_3-X_1)(X_3-X_2)}\right](X_3-X)(X_3-X_2)$$

$$+\left[\frac{Y_2(X_3-X)+Y_3(X-X_2)}{(X_2-X_1)(X_3-X_1)(X_3-X_2)}\right](X-X_1)(X_2-X_1)$$

$$\left[(X_2-X_1)(X_3-X_1)(X_3-X_2)\right]Y_{123} =$$

$$Y_1\left[(X_2-X)(X_3-X)(X_3-X_2)\right]$$
$$+\ Y_2\left[(X-X_1)(X_3-X)(X_3-X_2)+(X_3-X)(X-X_1)(X_2-X_1)\right]$$
$$+\ Y_3\left[(X-X_2)(X-X_1)(X_2-X_1)\right]$$

$$\frac{dP}{dx} = \frac{Y_1\left[2x - x_2 - x_3\right]}{(x_3 - x_1)(x_3 - x_1)} + \frac{Y_2\left[2x - x_1 - x_3\right]}{(x_2 - x_1)(x_2 - x_3)} + \frac{Y_3\left[2x - x_1 - x_2\right]}{(x_3 - x_1)(x_3 - x_2)}$$

$$\left.\frac{dP}{dx}\right|_{x=x_2} = \frac{Y_1\left[x_2 - x_3\right]}{(x_2 - x_1)(x_3 - x_1)} + \frac{Y_2\left[x_2 - x_1\right]}{(x_2 - x_1)(x_2 - x_3)} + \frac{Y_2\left[x_2 - x_3\right]}{(x_2 - x_1)(x_2 - x_3)} + \frac{Y_3\left[x_2 - x_1\right]}{(x_3 - x_1)(x_3 - x_2)}$$