$$g(\sigma) - f(\sigma) = \underbrace{\partial_Y (P_n(\sigma))}_{} + \underbrace{P_{n-1}(\partial_X(\sigma))}_{} + \underbrace{P_0}_{}$$

$$g(\sigma) = \underbrace{\partial_Y (P_n(\sigma))}_{} + \underbrace{P_0}_{}$$

$$\underbrace{\partial_Y \qquad \qquad P_0}_{}$$