

$$\text{sum} \quad = v_1'(1 + \eta_N) + v_2'(1 + \eta_{N-1}) + \dots + v_n'(1 + \eta_1) \quad = v_1(1 + \eta_{N+1}) + v_2(1 + \eta_N) + \dots + v_N(1 + \eta_2) \quad = (a_1 + \alpha_1)$$