

HW 8 No 1

1.

$$Y(1) = h_0(0) \times x(1) + h_0(1) \times x(0) + h_0(2) \times x(-1) \\ = \frac{1}{3} \times 0.8 + \frac{1}{3} \times 0.6 + \frac{1}{3} \times 0.5 = 0.6333$$

$$e(1) = d(1) - Y(1) \\ = 1.2 - 0.6333 = 0.5667$$

$$h_1(0) = h_0(0) + \Delta \times e(1) \times x(1) = \frac{1}{3} + 0.2 \times 0.5667 \times 0.8 = 0.4240$$

$$h_1(1) = h_0(1) + \Delta \times e(1) \times x(0) = \frac{1}{3} + 0.2 \times 0.5667 \times 0.6 = 0.4013$$

$$h_1(2) = h_0(2) + \Delta \times e(1) \times x(-1) = \frac{1}{3} + 0.2 \times 0.5667 \times 0.5 = 0.3900$$

$$Y(2) = h_1(0) \times x(2) + h_1(1) \times x(1) + h_1(2) \times x(0) \\ = (0.4240)(0.6) + (0.4013)(0.8) + (0.3900)(0.6) \\ = 0.80944 \approx 0.8095$$

$$e(2) = d(2) - Y(2) \\ = 1.6 - 0.8095 = 0.7905$$

$$h_2(0) = h_1(0) + \Delta \times e(2) \times x(2) = 0.4240 + 0.2 \times (0.7905) \times (0.6) = 0.51886$$

$$h_2(1) = h_1(1) + \Delta \times e(2) \times x(1) = 0.4013 + 0.2 \times (0.7905) \times (0.8) = 0.52778$$

$$h_2(2) = h_1(2) + \Delta \times e(2) \times x(0) = 0.3900 + 0.2 \times (0.7905) \times (0.6) = 0.48486$$

$$Y(3) = h_2(0) \times x(3) + h_2(1) \times x(2) + h_2(2) \times x(1) \\ = 0.5189(1.2) + 0.5278(0.6) + 0.4849(0.8) \\ = 0.62268 + 0.31668 + 0.38792 = 1.32728 \approx 1.3272$$

$$e(3) = d(3) - Y(3) = 1.8 - 1.3272 = 0.4728$$

$$h_3(0) = h_2(0) + \Delta \times e(3) \times x(3) = 0.5189 + 0.2 \times 0.4728 \times (1.2) = 0.6324$$

$$h_3(1) = h_2(1) + \Delta \times e(3) \times x(2) = 0.5278 + 0.2 \times 0.4728 \times (0.6) = 0.5845$$

$$h_3(2) = h_2(2) + \Delta \times e(3) \times x(1) = 0.4849 + 0.2 \times 0.4728 \times (0.8) = 0.5665$$