Exercise 2.6

(a) $p_{x+3} = 1 - q_{x+3} = 1 - 0.02 = 0.98$

(b) $_2p_x = p_x \cdot p_{x+1} = (0.99)(0.985) = 0.97515$

(c) Since $_3p_{x+1} = {_2p_{x+1}} \cdot p_{x+3}$, then $_2p_{x+1} = \dfrac{_3p_{x+1}}{p_{x+3}} = \dfrac{0.95}{0.98} = 0.9693878$

(d) $_3p_x = p_x \cdot {_2p_{x+1}} = (0.99)(0.9693878) = 0.9596939$

(e) $_{1|2}q_x = p_x \cdot {_2q_{x+1}} = p_x(1 - {_2p_{x+1}}) = 0.99(1 - 0.9693878) = 0.03030612$