

SHUBHAM GUPTA

180749

HW 7

classmate

Date _____

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$$\begin{aligned} \omega_1 &= P(X_{T-1} = 1 | X_0 = 1) \\ \omega_0 &= P(X_{T-1} = 1 | X_0 = 0) \end{aligned}$$

$$\begin{aligned} \omega_0 &= P(X_{T-1} = 1, X_1 = 0 | X_0 = 0) \\ &\quad + P(X_{T-1} = 1, X_1 = 1 | X_0 = 0) \\ &\quad + P(X_{T-1} = 1, X_1 = 2 | X_0 = 0) \end{aligned}$$

$$\omega_0 = \omega_0 P_{00} + \omega_1 P_{01}$$

↓

$$\omega_1 = 1.5 \omega_0$$

$$\omega_1 = P_{10} \omega_0 + P_{11} \omega_1 + 0.2$$

solving for ω_0

$$\boxed{\omega_0 = 4/9}$$