Homework 2

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1

$$P = \begin{vmatrix} 0.0 & 0.0 & 1.0 \\ 0.0 & 2.0 & 1.0 \\ 0.5 & 0.5 & 0.0 \end{vmatrix}$$

Since All rows add up to 1, $P_1 = P$

$$P_2 = 0.3 \begin{vmatrix} \frac{1}{3} & \frac{1}{3} & \frac{1}{3} \\ \frac{1}{3} & \frac{1}{3} & \frac{1}{3} \\ \frac{1}{3} & \frac{1}{3} & \frac{1}{3} \end{vmatrix} + (1 - 0.3) \begin{vmatrix} 0.0 & 0.0 & 1.0 \\ 0.0 & 0.0 & 1.0 \\ 0.5 & 0.5 & 0.0 \end{vmatrix}$$

$$P_2 = \begin{vmatrix} 0.1 & 0.1 & 0.1 \\ 0.1 & 0.1 & 0.1 \\ 0.1 & 0.1 & 0.1 \end{vmatrix} + 0.7 \begin{vmatrix} 0.0 & 0.0 & 1.0 \\ 0.0 & 0.0 & 1.0 \\ 0.5 & 0.5 & 0.0 \end{vmatrix}$$

$$P_2 = \begin{vmatrix} 0.1 & 0.1 & 0.1 \\ 0.1 & 0.1 & 0.1 \\ 0.1 & 0.1 & 0.1 \end{vmatrix} + \begin{vmatrix} 0.0 & 0.0 & 7.0 \\ 0.0 & 0.0 & 7.0 \\ 0.35 & 0.35 & 0.0 \end{vmatrix}$$

$$P_2 = \begin{vmatrix} 0.1 & 0.1 & 0.8 \\ 0.1 & 0.1 & 0.8 \\ 0.45 & 0.45 & 0.1 \end{vmatrix}$$

2

$$P = \begin{vmatrix} 0.0 & 0.0 & 1.0 \\ 0.0 & 2.0 & 1.0 \\ 0.5 & 0.5 & 0.0 \end{vmatrix}$$