

$$\frac{.6}{(1361)} P(\bar{A}^2 | A^2) = \frac{P(\bar{A}^2 \cap A^2)}{P(A^2)} = \frac{P(\bar{A}^2)}{1 - P(A^2)} = \frac{\frac{4}{9} \cdot \frac{4}{9}}{1 - \frac{5}{9} \cdot \frac{4}{8}} = \frac{32}{117}$$

7 (1361) $\begin{array}{c|c|c|c} & \text{ימים} & \text{לילות} & \\ \hline 0.6 & & 0.3 & \bar{A} \text{ מלכות} \\ \hline 0.4 & & 4/15 & \bar{A} \text{ מלכות} \\ \hline 1 & & & \end{array}$

$$P(\bar{A} | \bar{A}) = \frac{1}{2} = \frac{P(\bar{A} \cap \bar{A})}{P(\bar{A})} = \frac{P(\bar{A} \cap \bar{A})}{0.6}$$

$$\Rightarrow P(\bar{A} \cap \bar{A}) = 0.6 \cdot \frac{1}{2} = 0.3$$

$$P(\bar{A} | \bar{A}) = \frac{2}{3} = \frac{P(\bar{A} \cap \bar{A})}{P(\bar{A})} = \frac{P(\bar{A} \cap \bar{A})}{0.4} \Rightarrow P(\bar{A} \cap \bar{A}) = 0.4 \cdot \frac{2}{3} = \frac{4}{15}$$

$$P(\bar{A}) = 0.3 + \frac{4}{15} = \frac{17}{30}$$

ללא מלכות המלכה הנקרא:

$$\textcircled{7} P(\bar{A} | \bar{A}) = \frac{P(\bar{A} \cap \bar{A})}{P(\bar{A})} = \frac{0.3}{17/30} = \frac{9}{17}$$

8 (1361) $\begin{array}{c|c|c|c|c} & \text{אלה} & \text{חוקה} & \text{מחקר} & \\ \hline 0.55 & 0.16 & 0.09 & 0.3 & \text{לילות} \\ \hline 0.45 & 0.04 & 0.21 & 0.2 & \text{ימים} \\ \hline 1 & 0.2 & 0.3 & 0.5 & \end{array}$

$$0.6 = P(\text{לילות} | \text{מחקר}) \Rightarrow P(\text{לילות} \cap \text{מחקר}) = 0.3$$

$$0.3 = P(\text{לילות} | \text{חוקה}) \Rightarrow P(\text{לילות} \cap \text{חוקה}) = 0.09$$

$$0.8 = P(\text{לילות} | \text{אלה}) \Rightarrow P(\text{לילות} \cap \text{אלה}) = 0.16$$

נמצא את המלכה

$$\textcircled{10} P(\text{אלה} | \text{חוקה}) = \frac{P(\text{אלה} \cap \text{חוקה})}{P(\text{אלה})} = \frac{0.21}{0.45} = \frac{7}{15}$$

$$\textcircled{7} P(\text{חוקה} | \text{אלה}) = \frac{P(\text{חוקה} \cap \text{אלה})}{P(\text{חוקה})} = \frac{0.21}{0.3} = 0.7$$

9 (1361) $\begin{array}{c} \bar{A} \text{ (לילה)} \\ \swarrow \searrow \\ (A) \bar{A} \quad (A) \bar{A} \\ \swarrow \searrow \quad \swarrow \searrow \\ (A) \bar{A} \quad (A) \bar{A} \quad (A) \bar{A} \quad (A) \bar{A} \end{array}$

$$P(\bar{A} | \bar{A}) = \frac{P(\bar{A} \cap \bar{A})}{P(\bar{A})} = \frac{0.2 \cdot 0.7}{0.2 \cdot 0.7 + 0.8 \cdot 0.2} = \frac{7}{13}$$

10 (1361) $\begin{array}{c} \text{פגז} \\ \swarrow \searrow \\ \text{פגז} \quad \text{פגז} \\ \swarrow \searrow \quad \swarrow \searrow \\ \text{פגז} \quad \text{פגז} \quad \text{פגז} \quad \text{פגז} \end{array}$

$$\textcircled{10} P(\text{פגז} | \text{פגז}) = \frac{P(\text{פגז} \cap \text{פגז})}{P(\text{פגז})} = \frac{P(\text{פגז} \cap \text{פגז})}{P(\text{פגז})}$$

$$= \frac{0.1 \cdot 0.6 \cdot 0.2}{0.9 \cdot 0.2 \cdot 0.4 + 0.1 \cdot 0.6 \cdot 0.2 + 0.1 \cdot 0.4 \cdot 0.6} = \frac{1}{9}$$

$$\textcircled{7} P(\text{פגז} | \text{פגז}) = \frac{P(\text{פגז} \cap \text{פגז})}{P(\text{פגז})} = \frac{0.9 \cdot 0.8 \cdot 0.8 + 0.9 \cdot 0.2 \cdot 0.6}{0.9} = 0.76$$