PRACTICE 7-3 KEY

1. $P(B) = 0.4$
2. $P(C \cup D) = 0.76$
3. $P(E \cap F) = 0.12$
4. $P(H) = 0$
5. *J* and *K* are independent since $P(J \cup K) = P(J) + P(K) - P(J) \cdot P(K)$

   $0.94 = 0.8 + 0.7 - (0.8)(0.7)$
6. L and M are <u>not</u> independent since $P(L \cup M) \neq P(L) + P(M) - P(L) \cdot P(M)$

   $0.89 \neq 0.1 + 0.9 - (0.1)(0.9)$

7.

   a. Water and Hamburger are <u>not</u> independent since $P(\text{Water} \cap \text{Hamburger}) \neq P(\text{Water}) \cdot P(\text{Hamburger})$

   $$\frac{45}{400} \neq \left(\frac{123}{400}\right)\left(\frac{191}{400}\right)$$

   b. No Drink and Hot Dog are independent since $P(\text{No Drink} \cap \text{Hot Dog}) = P(\text{No Drink}) \cdot P(\text{Hot Dog})$

   $$\frac{46}{400} = \left(\frac{100}{400}\right)\left(\frac{184}{400}\right)$$

   c. No Drink and No Food are mutually exclusive since $P(\text{No Drink} \cap \text{No Food}) = 0$

   d. The **totals** or **marginal values,** since it will help them know approximate quantities of each item needed.

★ 8.

   a. Neither
   b. Mutually Exclusive
   c. Independent