

..... 实验报告 实验日期 年 月 日

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3.1

$$1. P(AB) = P(A) \cdot P(B|A) = 0.4$$

$$P(\bar{A}B) = 1 - P(A \cup B)$$

$$P(A \cup B) = P(A) + P(B) - P(AB)$$

$$P(\bar{A}B) = 0.3$$

(2) 记 $A = \{\text{投入基金}\}$ $B = \{\text{购买股票}\}$

$$1) P(B|A) = \frac{P(AB)}{P(A)} = \frac{19}{58}$$

$$2) P(A|B) = \frac{P(AB)}{P(B)} = \frac{19}{28}$$

(3) 记 $A = \{\text{第一次为次品}\}$ $B = \{\text{第二次为次品}\}$
 $C = \{\text{第三次为正品}\}$

$$\begin{aligned} P(ABC) &= P(A) P(B|A) P(C|AB) \\ &= \frac{10}{100} \times \frac{9}{99} \times \frac{90}{98} \\ &= \frac{9}{1098} \end{aligned}$$

3.2

1. (1) 记 $A = \{\text{该球为红球}\}$

$$P(A) = \frac{1}{2} \times \frac{6}{10} + \frac{1}{2} \times \frac{8}{14} = \frac{41}{70}$$

$$(2) P(A) = \frac{14}{24} = \frac{7}{12}$$

5. 记 $A = \{\text{第一次取得黑球}\}$ $B = \{\text{第二次取得黑球}\}$
 ~~$P(A) = P(B) P(B|A)$~~

$$P(A) = \frac{n}{m+n} \times \frac{n}{m+n-1} = \frac{mn}{(m+n)(m+n-1)}$$

$$P(A) = P(A_1) + P(A_2) = \frac{n^2 + (2m-1)n^2 + mn^2}{(m+n)(m+n-1)}$$