M. Hasyim Abdillah P. 1101191095 TT-43-11

1. a. A : kejadian munculnya kartu keriting dan sekop dalam 1 kali pengambilan

$P(A) = 0$

b. B : kejadian munculnya kartu keriting atau sekop dalam 1 kali pengambilan

$P(B) = \frac{13}{52} + \frac{13}{52} = \frac{13}{26} = \frac{1}{2}$

c. C : kejadian munculnya kartu keriting atau wajik dalam 1 kali pengambilan

$P(C) = \frac{13}{52} + \frac{13}{52} = \frac{1}{2}$

d. D : kejadian munculnya kartu hati atau wajik dalam 1 kali pengambilan

$P(D) = \frac{13}{52} + \frac{13}{52} = \frac{1}{2}$

2. $P(A \cap B) = 0,16$

$P(\overline{A \cup B}) = 0,36$

$P(A \cup B) = 1 - 0,36$

$P(A \cup B) = 0,64$

$P(A) + P(B) - P(A \cap B) = 0,64$

$P(A) + P(B) - 0,16 = 0,64$

$P(A) + P(B) = 0,8$

$P(A \cap B) = P(A) \cdot P(B) = 0,16$

$P(B) = \frac{0,16}{P(A)}$

$P(A) + \frac{0,16}{P(A)} = 0,8$

$(P(A))^2 + 0,16 = 0,8\, P(A)$

$(P(A))^2 - 0,8\, P(A) + 0,16 = 0$

$(P(A) - 0,4)^2 = 0$

$P(A) = 0,4$

$P(B) = 0,4$

3. $P(A) = 0,2 \quad P(B) = 0,3$

$P(A \cup B) = 0,44$

$P(A) + P(B) - P(A \cap B) = 0,44$

$0,2 + 0,3 - P(A \cap B) = 0,44$

$P(A \cap B) = 0,06$

$P(A \cap B) = 0,2 \cdot 0,3 = 0,06$ $\Big\}$ $\therefore$ A & B independent

4. $P(A) = P(B) = p$, $P(A \cup B) = 0,7$, $P(A \cap B) = 0,2$

4.1 $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

$0,7 = p + p - 0,2$

$2p = 0,9$

$p = 0,45$

4.2 $P(B \cup C) = 0,7$

$P(B) + P(C) - P(B \cap C) = 0,7$

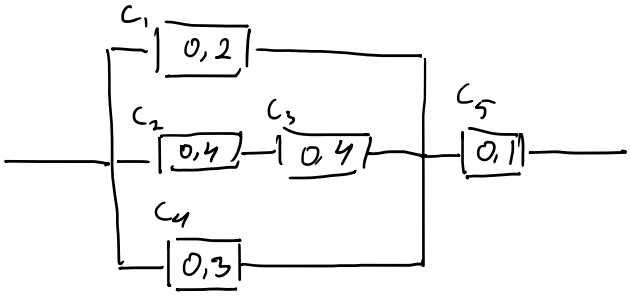
$0,45 + P(C) - P(B) \cdot P(C) = 0,7$

$0,45 + P(C) - 0,45P(C) = 0,7$

$0,55P(C) = 0,25$

$P(C) = \frac{0,25}{0,55} = 0,45$

5.



$P_S(C_2 \cap C_3) = P_S(C_2) \cdot P_S(C_3) = (1 - 0,4)(1 - 0,4) = 0,36$

$P_F(C_1 \cap C_2 \cap C_3 \cap C_4) = P_F(C_1) \cdot P_F(C_2 \cap C_3) \cdot P_F(C_4) = 0,2 \cdot (1 - 0,36) \cdot 0,3 = 0,03024$

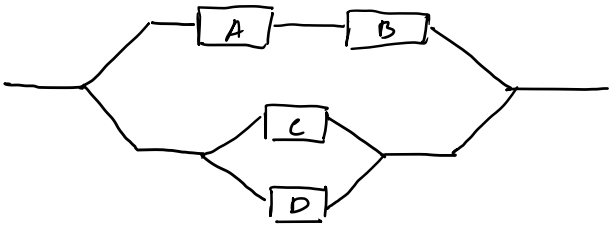
$P_S(C_1 \cap C_2 \cap C_3 \cap C_4 \cap_5) = P_S(C_1 \cap C_2 \cap C_3 \cap C_4) \cdot P_S(C_5)$

$= (1 - 0,03024) \cdot (1 - 0,1)$

$= 0,96976 \cdot 0,9$

$= 0,86544$

6.



$P_F(A) = P_F(B) = P_F(C) = P_F(D) = 0,1$

$P_F(C \cap D) = 0,1 \cdot 0,1 = 0,01$

$P_S(A \cap B) = (1-0,1)(1-0,1) = 0,9 \cdot 0,9 = 0,81$

$P_F(A \cap B \cap C \cap D) = P_F(C \cap D) \cdot P_F(A \cap B)$

$= 0,01 \cdot (1 - 0,81)$

$= 0,01 \cdot 0,19$

$= 0,0019$

$P_S(A \cap B \cap C \cap D) = 1 - 0,0019 = 0,9981$