1.

5.

$H(K|C) = H(K) + H(P) - H(C)$

$H(X) = -\sum_{i=1}^{n} p_i log_2 p_i$

$H(K) = H(X)|X = \frac{1}{2}, \frac{1}{4}, \frac{1}{4} = 1.5$

$H(K) = H(X)|X = \frac{1}{3}, \frac{1}{6}, \frac{1}{2} = 1.459$

$P_C(C_i) = \sum_{\forall e_{k_i}(p_j)=C_i} P(k_i) * P(p_j)$

$H(C) = H(X)|X = \frac{7}{24}, \frac{5}{12}, \frac{1}{8}, \frac{1}{6} = 1.851$

$H(K) + H(P) - H(C) = 1.108$