

Solutions of the first week's homework (Section 1.2 # 1, 4, 5, 8)

- 1. $S = \{RRR, RRB, RBR, RBB, BRR, BRB, BBR, BBB\}$

- 4. EF: One 1 and one even

$E^c F$: One 1 and one odd

$E^c F^c$: Both even or both belong to $\{3,5\}$.

- 5. $\{QQ, QN, QP, QD, DN, DP, NP, NN, PP\}, \{QP\}, \{DN, DP, NN\}, \phi$.

If you consider the two coins draw at different time, the sample space and the corresponding events given below are also correct

- $\{QQ, QN, NQ, QP, PQ, QD, DQ, DN, ND, DP, PD, NP, PN, NN, PP\}, \{QP, PQ\}, \{DN, ND, DP, PD, NN\}, \phi$.

- 8. For $1 \leq i \leq 3, 1 \leq j \leq 3$, by $a_i b_j$ we mean passenger a gets off at hotel i and passenger b gets off at hotel j . The answer are

$$\{a_i b_j : 1 \leq i \leq 3, 1 \leq j \leq 3\}$$

and

$$\{a_1 b_1, a_2 b_2, a_3 b_3\}.$$

respectively.