

If three fair coins are each tossed once and at least two of them come up Heads, what is the probability that all three come up Heads?

- (a)  $1/4$
- (b)  $1/2$
- (c) 1
- (d)  $1/3$
- (e)  $3/4$
- (f)  $1/8$
- (g)  $3/8$
- (h)  $5/8$
- (i)  $2/3$
- (j) 0
- (k)  $1/5$
- (l) None of these

Suppose  $A$ ,  $B$ ,  $C$  are events in sample space  $S$ , where  $A$  and  $C$  are disjoint. The following probabilities are known:  $P(A) = 1/8$ ,  $P(B) = 5/12$ ,  $P(C) = 5/8$ ,  $P(AB) = 1/24$ ,  $P(BC) = 1/4$ . What is the probability that neither  $A$  nor  $B$  nor  $C$  occur?

- (a)  $1/8$
- (b)  $0$
- (c)  $1/24$
- (d)  $1$
- (e)  $1/3$
- (f)  $1/12$
- (g)  $5/24$
- (h)  $1/6$
- (i)  $1/4$
- (j)  $5/12$
- (k)  $3/8$
- (l) None of these

Suppose a sample space  $S = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$  has equiprobable outcomes. Which one of the following events is independent of the event  $\{2, 8\}$  ?

- (a)  $\{1, 3, 5, 8, 9\}$
- (b)  $\{2, 4, 5, 8\}$
- (c)  $\{1, 3, 5, 7, 9\}$
- (d)  $\{1, 5, 9\}$
- (e)  $\{3, 6, 7, 9\}$
- (f)  $\{3, 5, 6, 7, 9\}$
- (g)  $\{1, 4, 6, 7\}$
- (h)  $\{4\}$
- (i)  $\{4, 5\}$
- (j)  $\{1, 3, 4, 5, 6, 7, 9\}$
- (k)  $\{9\}$
- (l) None of these