

Example 1 - True or False

- If $P(A) + P(B) + P(C) = 1$ then A, B and C are mutually exclusive.
- If $P(A \cup B \cup C) = 1$ then A, B and C are mutually exclusive.

Example 2

Eleven chairs are numbered 1 through 11. Seven boys and four girls sit on these chairs at random. What is the probability that chair number 5 is occupied by a boy?

Example 3

For a Democratic candidate to win an election she must win districts I, II and III. Polls have shown that the probability of winning I and III is 0.55, losing II but winning I is 0.34 and losing II and III but winning I is 0.15. According to the poll what is the probability that she wins in all three?

Example 4

Seven men throw their hats in the middle of the room. If each picks at random one hat from the stack what is the probability that none of them gets his own hat?

Example 5

Bill and John keep playing chess until one of them wins two games in a row or three games altogether. In what percent of all possible cases does the game end because Bill wins three games but no two in a row.