

Theorem: 1.1-1

For each event A ,

$$P(A) = 1 - P(A')$$

Proof

We have

$$S = A \cup A' \quad \text{and} \quad A \cap A' = \emptyset$$

Thus, from properties (b) and (c) of **probability**, it follows

$$1 = P(A) + P(A')$$

Hence

$$P(A) = 1 - P(A')$$