

3.4: Independent Events

Alex L.

October 16, 2024

Definition: (Independent Events) Two events, E and F are **independent** if

$$P(E \cap F) = P(E) \times P(F)$$

Two events that are not independent are **dependent**.

Example: A card is selected at random from an ordinary deck of 52 playing cards. If E is the event that the selected card is an ace and F is the event that it is a spade, then E and F are independent. This follows because $P(E \cap F) = \frac{1}{52}$, whereas $P(E) = \frac{4}{52}$ and $P(F) = \frac{13}{52}$