

1. Two cards are drawn (without replacement) from a usual deck of 52 cards. Let

$$A = \{\text{The first card drawn is an ace.}\} \quad B = \{\text{The second card drawn is an ace.}\}$$

Compute (i) $\mathbb{P}(A)=$

(ii) $\mathbb{P}(B|A)=$

(iii) $\mathbb{P}(B \cap A)=$

(iv) Are B and A independent?

2. We keep rolling a fair die until it turns up 6 for the first time. Let X denote the number of flips. Compute:

$\mathbb{P}(X \text{ takes an odd value}) =$