Assignment 7

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Python code link: https: //github.com/ParvezAlam123/ Assignment-7/tree/main

$$P(A) = P(X_1 = 1)$$

$$= \frac{3}{6}$$

$$= \frac{1}{2}$$

$$P(B) = P(X_2 = 1)$$

$$= \frac{3}{6} = \frac{1}{2}$$

$$P(A \cap B) = P(X_1 = 1 \cap X_2 = 1)$$

$$= \frac{1}{6}$$

$$P(A) \times P(B) = \frac{1}{2} \times \frac{1}{2}$$

$$= \frac{1}{4}$$

1 Prob.misc.6.16:

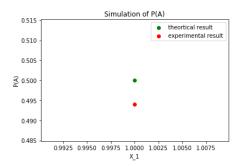
A die marked 1,2,3 in red and 4,5,6 in green is tossed. Let A be the event 'the number is even,' and B be the event,'the number is red'. Are A and B independent?

Solution : Let X_1 and X_2 are as follows

| P(A) | $\cap D$ | ١ / | D_{I} | 41 | (D) |
|------------|----------|-----|----------|----|-----|
| $P \mid A$ | $\cup D$ |) = | $P \cup$ | A | (D) |

Hence both event A and B are not independent.

| | X_1 | Random variable for even or odd |
|---|-------|----------------------------------|
| ſ | X_2 | Random variable for red or green |



$$X_1, X_2 \in \{0, 1\}$$

