FA2 R - Language

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FA2 Questions

1. **Use R to illustrate that the probability of getting:**

  (a) a head is 0.5 if a fair coin is tossed repeatedly;
  (b) a red card is 0.5 if cards are drawn repeatedly with replacement from a well-shuffled deck;
  (c) an even number is 0.5 if a fair die is rolled repeatedly.

A. Answer with Trials set to 100

```
## Frequency of getting a head: 0.43
```

```
## Frequency of getting a tail: 0.57
```

B. Answer with Trials set to 1000

```
## Frequency of red Cards: 0.516
```

```
## Frequency of black Cards: 0.484
```

C. Answer with Trials set to 10000

```
## Frequency of getting an even number: 0.4967
```

```
## Frequency of getting an odd number: 0.5033
```

2. **An experiment consists of tossing two fair coins. Use R to simulate this experiment 100 times and obtain the relative frequency of each possible outcome. Hence, estimate the probability of getting one head and one tail in any order.** *Answer with Trials set to 100*

```
## Probability of getting one head and one tail in any order: 0.53
```

3. **An experiment consists of rolling a die. Use R to simulate this experiment 600 times and obtain the relative frequency of each possible outcome. Hence, estimate the probability of getting each of 1, 2, 3, 4, 5, and 6.** *Answer with Trials set to 600*

```
## Relative frequencies:
```

```
## Outcome 1 : 0.1816667
## Outcome 2 : 0.1716667
## Outcome 3 : 0.165
## Outcome 4 : 0.16
## Outcome 5 : 0.165
## Outcome 6 : 0.1566667
```