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# PROBABILITY



# Probability:



Many events can't be predicted with total certainty. The best we can say is how likely they are to happen, using the idea of probability.

Probability= (# desired)/(# total)

Probability lies between 0 and 1.



## Question 01:



Alice has 2 kids and one of them is a girl. What is the probability that the other child is also a girl? (You can assume that there are an equal number of males and females in the world.)

- A. 0.5
- B. 0.25
- C. 0.333
- D. 0.75

**Answer: C**

## Question 02:



A fair six-sided die is rolled twice. What is the probability of getting 2 on the first roll and not getting 4 on the second roll?

- A.  $1/36$
- B.  $5/36$
- C.  $1/18$
- D.  $1/6$

**Answer: B**

### Question 03:



Consider a tetrahedral die and roll it twice. What is the probability that the number on the first roll is strictly higher than the number on the second roll?

**(Note:** A tetrahedral die has only four sides (1, 2, 3 and 4).)

- A.  $1/2$
- B.  $3/8$
- C.  $7/16$
- D.  $9/16$

**Answer: B**

## Question 04:



A player is randomly dealt a sequence of 13 cards from a deck of 52-cards. All sequences of 13 cards are equally likely. In an equivalent model, the cards are chosen and dealt one at a time. When choosing a card, the dealer is equally likely to pick any of the cards that remain in the deck. If you dealt 13 cards, what is the probability that the 13th card is a King?

- A.  $1/52$
- B.  $1/26$
- C.  $1/12$
- D.  $1/13$

**Answer: D**

## Question 05:



A fair six-sided die is rolled 6 times. What is the probability of getting all outcomes as unique?

- A. 0.01543
- B. 0.01993
- C. 0.23148
- D. 0.03333

**Answer: A**



## Question 06:



A jar contains 4 marbles. 3 Red & 1 white. Two marbles are drawn with replacement after each draw. What is the probability that the same color marble is drawn twice?

- A.  $1/2$
- B.  $5/8$
- C.  $3/8$
- D.  $5/16$

**Answer: B**

## Question 07:



Jack is having two coins in his hand. Out of the two coins, one is a real coin and the second one is a faulty one with Tails on both sides. He blindfolds himself to choose a random coin and tosses it in the air. The coin falls down with Tails facing upwards. What is the probability that this tail is shown by the faulty coin?

- A.  $1/3$
- B.  $2/5$
- C.  $2/3$
- D.  $1/4$

**Answer: C**

## Question 08:



If two fair coins are flipped and at least one of the outcomes is known to be a head, what is the probability that both outcomes are heads?

- A.  $1/2$
- B.  $1/3$
- C.  $1/5$
- D.  $2/7$

**Answer: B**

## Question 09:



Suppose a fair six-sided die is rolled once. If the value on the die is 1, 2, or 3, the die is rolled a second time. What is the probability that the sum total of values that turn up is at least 6?

- A.  $1/15$
- B.  $2/5$
- C.  $35/25$
- D.  $5/12$

**Answer: D**

## Question 10:



A deck of 5 cards (each carrying a distinct number from 1 to 5) is shuffled thoroughly. Two cards are then removed one at time from the deck. What is the probability that the two cards are selected with the number on the first card being one higher than the number on the second card?

- A.  $1/6$
- B.  $1/5$
- C.  $1/2$
- D.  $7/9$

**Answer: B**



## Question 11:



A card is drawn from a pack of 52 cards. The probability of getting a queen of club or a king of heart is:

- A.  $1/13$
- B.  $2/13$
- C.  $1/26$
- D.  $1/52$

**Answer: C**



## Question 12:



If a fair coin is tossed four times. What is the probability that two heads and two tails will result?

- A.  $1/2$
- B.  $3/8$
- C.  $5/8$
- D.  $2/4$

**Answer: B**



## Question 13:



Let  $P(E)$  denote the probability of the event  $E$ . Given  $P(A) = 1$ ,  $P(B) = 1/2$ , the values of  $P(A | B)$  and  $P(B | A)$  respectively are

- A.  $1/4, 1/2$
- B.  $1/2, 1/14$
- C.  $1/2, 1$
- D.  $1, 1/2$

**Answer: D**





## Question 14:



Four fair coins are tossed simultaneously. The probability that at least one head and one tail turn up is :

- A.  $7/8$
- B.  $3/13$
- C.  $1/4$
- D.  $9/52$

**Answer: A**



## Question 15:



Seven (distinct) car accidents occurred in a week. What is the probability that they all occurred on the same day?

- A.  $7/2^7$
- B.  $1/2^7$
- C.  $1/7^7$
- D.  $1/7^6$

**Answer: D**