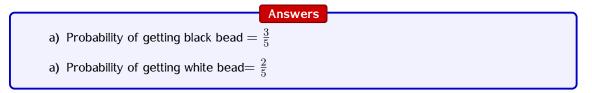
Notes of Online class

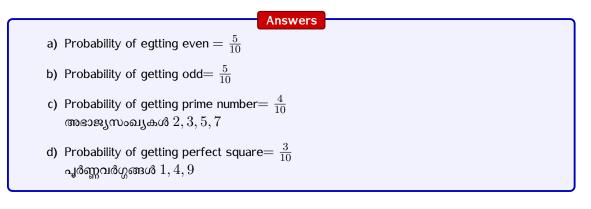
0.1 Mathematics of Chance

Worksheet 1

- * Tossing a coin is a chance play.Nobody can predict the outcome , head or tail . This can be considered as a probability experiment.
- * Possible outcomes are H- head and T- tail. The total number of outcomes is 2. It only one Head in the outcomes , the probability of getting head is $\frac{1}{2}$
- $\star\,$ Probability is measured as the ratio of number of favourable outcomes and number of possible outcomes. The probability is a number from 0 to 1 .
- 1) A vessel contains 3 black beads and 2 white beads. One is taken from the vessel without looking into the vessel.
 - a) What is the probability of getting black bead?
 - b) What is the probability of getting white bead?



- 2) A box contains 10 cards on which one of the numbers $1, 2, 3 \cdots 10$ is written in each card.One card is taken from the box at random.
 - a) What is the probability of getting a an even numbered card
 - b) What is the probability of getting an odd numbered card?
 - c) What is the probability of getting a card on which a prime number is written?
 - d) What is the probability of getting a perfect square on the card.



- 3) Each of the numbers from 1 to 100 are written on small paper pieces .One is taken from the card at random.
 - a) How many perfect squared cards are there in the box?
 - b) What is the probability of getting a perfect squared card?
 - c) What is the probability of getting an even numbered card?

- d) What is the probability of getting an odd numbered card?
- e) What is the probability of not getting a perfect numbered card?

Answers
a) There are 10 perfect squares
b) Probability of getting a perfect square $=\frac{10}{100}=\frac{1}{10}$
c) Probability of getting even perfect square $=\frac{5}{100}=\frac{1}{20}$
d) Probability of getting odd perfect square $=\frac{5}{100}=\frac{1}{20}$
e) Probability of not getting a perfect square $= 1 - \frac{1}{10} = \frac{9}{10}$

- 4) A die in which the numbers $1 \mbox{ to } 6 \mbox{ are written on the faces is thrown}$
 - a) What is the probability of falling an even numbered face?
 - b) What is the probability of getting an odd numbered face ?
 - c) What is the probability of getting a prime numbered face?

Answers

- a) Probability of falling even face $=\frac{3}{6}=\frac{1}{2}$
- b) Probability of falling odd face $=\frac{3}{6}=\frac{1}{2}$
- c) Probability of falling prime numbered face $=\frac{3}{6}=\frac{1}{2}$
- 5) Two digit numbers are written in small paper pieces and placed in a box.One is taken from the box at random
 - a) How many multiples of 5 are there in the box?
 - b) What is the probability of getting a multiple of 5?
 - c) What is the probability of not getting a multiple of 5?

Answers

- a) $10,11,12\cdots 99$ are the two digit numbers . Number of two digit numbers is 90 Multiples of five are $10,15,20\cdots 95$ Number of numbers = 18
- b) Probability of getting a multiple of five $=\frac{18}{90}$

1

c) Probability of not getting a multiple of five $1 - \frac{18}{90} = \frac{72}{90}$

¹Compiler : John P.A, sjpuzzles@gmail.com , jpavpz@gmail.com | 9847307721