# 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 $\frac{1}{2}$

⋆ 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?

**Answers**

a) Probability of getting black bead $= \frac{3}{5}$

a) Probability of getting white bead$= \frac{2}{5}$

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.

**Answers**

a) Probability of egtting even $= \frac{5}{10}$

b) Probability of getting odd$= \frac{5}{10}$

c) Probability of getting prime number$= \frac{4}{10}$
അഭാജ്യസംഖ്യകൾ $2, 3, 5, 7$

d) Probability of getting perfect square$= \frac{3}{10}$
പൂർണ്ണവർഗ്ഗങ്ങൾ $1, 4, 9$

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 $1$ to $6$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 $= \frac{18}{90}$

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



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