|  |  |
| --- | --- |
| Activity | Data Type |
| Number of beatings from Wife | Discrete |
| Results of rolling a dice | Discrete |
| Weight of a person | Continuous |
| Weight of Gold | Continuous |
| Distance between two places | Continuous |
| Length of a leaf | Continuous |
| Dog's weight | Continuous |
| Blue Color | Discrete |
| Number of kids | Discrete |
| Number of tickets in Indian railways | Discrete |
| Number of times married | Discrete |
| Gender (Male or Female) | Discrete |

Q1) Identify the Data type for the Following:

Nominal, Ordinal, Interval, Ratio.

|  |  |
| --- | --- |
| Data | Data Type |
| Gender | nominal |
| High School Class Ranking | ordinal |
| Celsius Temperature | interval |
| Weight | ratio |
| Hair Color | nominal |
| Socioeconomic Status | nominal |
| Fahrenheit Temperature | interval |
| Height | ratio |
| Type of living accommodation | ordinal |
| Level of Agreement | ordinal |
| IQ(Intelligence Scale) | ordinal |
| Sales Figures | ratio |
| Blood Group | nominal |
| Time Of Day | ratio |
| Time on a Clock with Hands | interval |
| Number of Children | countable |
| Religious Preference | nominal |
| Barometer Pressure | interval |
| SAT Scores | ratio |
| Years of Education | ordinal |

Q3) Three Coins are tossed, find the probability that two heads and one tail are obtained?

Ans) N=8

S=[ (TTT),(HHH),(THH),(HHT),(HTH),(TTH),(HTT),(THT)]

Total number of getting two heads and one tail(S)=3

Total probability that getting two heads and one tail(P) = 3/8

T(P)=0.375

---------------------------------------------------------------------------------------

Q4) Two Dice are rolled, find the probability that sum is

1. Equal to 1
2. Less than or equal to 4
3. Sum is divisible by 2 and 3

S=36

[(1,1),(1,2),(1,3),(1,4,),(1,5),(1,6),

(2,1),(2,2),(2,3),(2,4,),(2,5),(3,6),

(3,1),(3,2),(3,3),(3,4,),(3,5),(3,6),

(4,1),(4,2),(4,3),(4,4,),(4,5),(4,6),

(5,1),(5,2),(5,3),(5,4,),(5,5),(5,6),

(6,1),(6,2),(6,3),(6,4,),(6,5),(6,6)]

ANS: a) Zero

b)The probability that sum is less than or equal to =6

=6/36

0.16

c)Sum is divisible by 2 and 3 =24

=24/36

0.66

=============================================

Q5) A bag contains 2 red, 3 green and 2 blue balls. Two balls are drawn at random. What is the probability that none of the balls drawn is blue?

Ans) R=2 , G=3 , B=2

Total number of balls =7

The probability that none of the balls drawn is blue=5

=5/7

=0.714

Q6)Calculate the Expected number of candies for a randomly selected child

Below are the probabilities of count of candies for children (ignoring the nature of the child-Generalized view)

|  |  |  |
| --- | --- | --- |
| CHILD | Candies count | Probability |
| A | 1 | 0.015 |
| B | 4 | 0.20 |
| C | 3 | 0.65 |
| D | 5 | 0.005 |
| E | 6 | 0.01 |
| F | 2 | 0.120 |

Child A – probability of having 1 candy = 0.015.

Child B – probability of having 4 candies = 0.20

**Ans: Probability of having one candy=candies count-probability.**

**ChildA:1-0.015=0.985**

**ChilsB:4-0.20=3.8**

**ChildC:3-0.65=3.8**

**ChildD:5-0.005=4.995**

**ChildE:6-0.01=5.99**

**ChildF:2-0.120=1.88**

**Q10) Draw inferences about the following boxplot & histogram**

Given histogram 

Ans:The above diagram showes that the given histogram follows positive skewness and it has mean>median>mode.

Ans: Above boxplot shows that ii has many outlayers on upper whisker.

Q13) What is the nature of skewness when mean, median of data are equal?

Ans: If the mean,median of data are equal then the skewness is zero.

Q14) What is the nature of skewness when mean > median ?

Ans: If the mean is greater than median then the distribution is positively skewed.

Q15) What is the nature of skewness when median > mean?

Ans:If the median is greater than mean then the distribution is negatively skewed.

Q16) What does positive kurtosis value indicates for a data ?

Ans: Positive kurtosis value indicates the distribution is high and it has thick tails.here mean>median>mode

Q17) What does negative kurtosis value indicates for a data?

Ans: Negative kurtosis value indicates the distribution has low tails than the normal distribution.

Q18) Answer the below questions using the below boxplot visualization.



What can we say about the distribution of the data?

Ans:

What is nature of skewness of the data?

Ans:the nature of skewness of the data is negative.

What will be the IQR of the data (approximately)?   
**Ans:The IQR of the data =Q3-Q1**

IQR=18-10=8