



Victoria University of Bangladesh

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Course Title: STATISTICAL DECISION MAKING

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STA 321

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Ans: to: the: Q: No: (1)

Statistics is the science concerned with developing and studying methods for collecting, analyzing, interpreting and presenting empirical data.

Statistics is a highly interdisciplinary field. Research in statistics finds applicability in virtually all scientific fields and research questions in the various scientific fields motivate the development of new statistical methods and theory. In developing methods and studying the theory that underlies the methods, statisticians draw on a variety of mathematical and computational tools.

Ans: to: the: Q: no: (2) (or)

(2)

A histogram is a type of chart that allows us to visualize the distribution of values in a dataset.

The x-axis displays the values in the dataset and the y axis shows the frequency of each value.

Depending on the values in the dataset a histogram can take on many different shapes.

The following examples show how to describe a variety of different histograms:

① Bell-shaped:

A histogram is bell-shaped if it resembles a bell curve and has one single peak in the middle of

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this type of distribution is the normal distribution.

② Uniform: A histogram is described as uniform if every value in a dataset occurs roughly the same number of times. This type of histogram often looks like a rectangle with no clear peaks.

③ Bimodal: A histogram is described as bimodal if it has two distinct peaks. We often say that this type of distribution has multiple modes that is multiple values occur most frequently in the dataset.

④ Multimodal: A histogram is described as multimodal if has more than two distinct peaks.

(5) Left Skewed: (4)
A histogram is left skewed if it has a tail on the left side of the distribution. Sometimes this type of distribution is also called negatively skewed.

(6) Right Skewed: A histogram is right skewed if it has a tail on the right side of the distribution. Sometimes this type of distribution is also called positively skewed.

(7) Random: The shape of a distribution can be described as random if there is no clear pattern in the data at all.

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Ans: to the Q: no: (3) on)

a) pie chart: A pie chart is a type of graph that represents the data in the circular graph. The slices of pie show the relative size of the data and it is a type of pictorial representation of data. A pie chart requires a list of categorical variables and numerical variables.

Pie charts are classified into two main types based on the dimension of the graph. These 2 types are namely:

2D pie chart

3D pie chart

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b) histogram: A histogram is an approximate representation of the distribution of numerical data. The term was first introduced by Karl Pearson. To construct a histogram the first step is to bin or bucket the range of values, that is divide the entire range of values into a series of intervals and then count how many values fall into each interval. The bins are usually specified as consecutive non overlapping intervals of a variable. The bins (intervals) must be adjacent and are often but not required to be of equal size.