

Topic 1: Introduction to Statistics Solutions

Q1

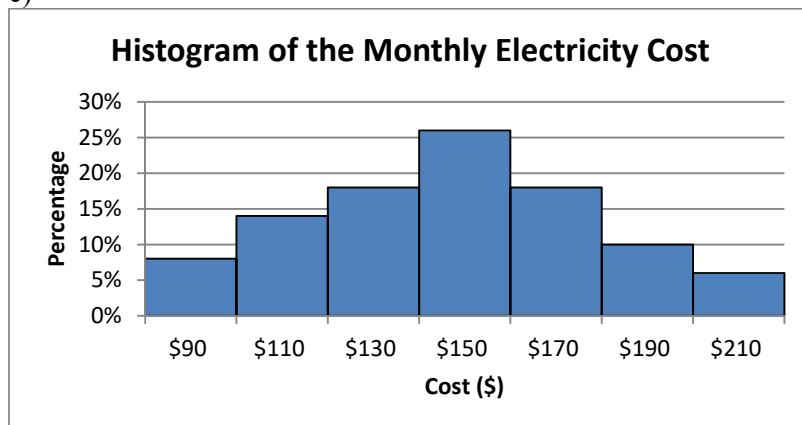
- a) Numerical, discrete
- b) Numerical, continuous
- c) Categorical
- d) Categorical

Q2

a) and b)

	Frequency	Percentage	Cumulative Percentage
\$80 – \$99	4	8%	8%
\$100 – \$119	7	14%	22%
\$120 – \$139	9	18%	40%
\$140 – \$159	13	26%	66%
\$160 – \$179	9	18%	84%
\$180 – \$199	5	10%	94%
\$200 – \$219	3	6%	100%

c)



d) 31 observations (or 62%).

Q3

Yes, the managing director is misleading the shareholders in Figure 2 because the profits in 1991 to 1999 are not shown. It gives the shareholder an impression that the company's profit increases rapidly from 1990 to 2000.

Q4

The intervals of each two consecutive years are not equal. The bin widths range from 4 years to 18 years. It gives an impression that the British pound declined steadily from year 1971-1975 compared with year 1939-1949. The title is too subjective. The measurement unit is not clearly stated. Say in 1925, the \$4.86, does it mean US\$4.86 to \$1 British pounds.

Q5

The figures of people lining the globe do not give any information about world population. And it may give the impression that future world population will be declining. In the chart, it appears that world population has been raising linearly. Notice that the time intervals on the horizontal axis are not uniform in size.

You should expect to have the graph showing slow increase in world population at the beginning years and exponential increase after year 1960.

Q6

The 3-D display makes it difficult to read the bars. Focusing at the front of each bar, the side of each bar, or the back of each bar will give different impressions.

The x-axis goes from right to left, instead of the usual direction left to right, thereby giving a misleading perception of the asymmetry. Moreover, the curved and sloped x-axis exaggerates the difference between lower-income bars and upper-income bars.

Percentage figure was missed from the bar of \$40,000-\$49,000. Moreover, the upper boundary of this bar should be \$49,999.

The bar widths are not proportional to the interval ranges. For example, it goes by \$10,000 then by \$25,000, increasing the height of the \$50,000-\$74,999 bar.

Total number of households was not given.