BHR 210: Statistics CAT 1

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Question One

Describe the meaning of the following terms.

- Statistics. (2 mks)
- Parameters. (2 mks)
- Stationarity. (2 mks)
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Question Two

You are provided with the following data relating to the population of Kenya between 1963 and 2018.

Table 1: Trends in Population, Kenya

Year	Population
1948	5.4
1962	8.3
1969	10.9
2000	31.4
2018	51.4

Note:
Source: Wikipedia, 2022

Required: 1. Describe the types of each of the variables, Year and Population. Example: Year is categorical and ordinal. (2 mks)

2. Sketch an appropriate plot to represent the data. (5 mks)
3. Is the data above times series, cross-sectional or panel (longitudinal)? Explain your answer. (2 mks)

Question 3

You are provided with the following data on continents.

Required: 1. Describe the types of each of the variables. Example: Year is categorical and ordinal. (5 mks)

2. Sketch an appropriate plot to represent the data, as follows:

- Continent versus area (3 mks).
- Continent versus population (3 mks).
- Area versus population (3 marks).

Table 2: Areas and Populations of World's Continents in 2018

continent	area_sq_km	population_billions
Asia	44,614,000	4.6 billion
Africa	30,365,000	1.3 billion
North America	24,230,000	580 million
South America	17,814,000	420 million
Antarctica	14,200,000	0
Europe	10,000,000	750 million
Oceania	8,510,900	42 million

Note:

Source: Wikipedia, 2022

NB: For simplicity, write your figures in tens of millions. For example, one million, 1,000,000 becomes 0.1. For example, one billion, 1,000,000,000 becomes 10. This means you write the figures given in full then divide by 10 million.

3. Is the data above times series, cross-sectional or panel (longitudinal)? Explain your answer. (2 mks)

Question 4

Visit the site https://en.wikipedia.org/wiki/Africa. Collect the population data for each country, ensuring to label the country region (example, North Africa, East Africa).

1. For each region (East Africa, West Africa, etc), compute the following values.

- Median population. (1 mk)
- Minimum population. (1 mk)
- Maximum population. (1 mk)
- First quartile. (2 mks)
- Third Quartile. (2 mks)

NB: Remember to order your data in ascending order when computing the median and the quartiles.

2. Draw side by side box plots with region on the x-axis (18 mks).