

# QMS 101-Introductory Statistics

## Topic I: Tutorial Questions

Dr. Anna Fome

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### Instructions

- Work individually or in groups

### Question 1: Meaning of Statistics

**Task: State whether each refers to:**

1. Statistics as **Numbers**
2. Statistics as a **Subject**

### Cases

1. Average salary = TZS 800,000
2. Researcher analyzes student data

3. Inflation rate = 5%
4. Bank studies customer spending

### **Question 2: Real-Life Application**

**Task: Explain how statistics is used:**

1. Supermarket stock decisions
2. University performance analysis
3. Government planning a hospital
4. Company measuring customer satisfaction

### **Question 3: Population, Sample, and Census**

**Task: For each scenario, identify:**

1. Population
2. Sample (if any)
3. Type: Census or Sample Study

#### **Scenarios**

1. Lecturer studies **all students**
2. Bank studies **200 out of 5,000 customers**
3. Government studies **all households**
4. Company surveys **50 out of 300 employees**

### **Question 4: Variables**

**Task**

For each of the variables listed below:

1. **Classify the variable as:**
  - Qualitative **or** Quantitative
2. **If it is Quantitative**, further classify it as:
  - Discrete **or** Continuous
3. **Give a short reason** for your answer.

### **Variables**

1. Age
2. Gender
3. Religion
4. Phone brand
5. Product category
6. Blood group
7. Customer satisfaction (1–5 scale)
8. Monthly income
9. Number of students
10. Price
11. Number of items sold
12. Number of books
13. Number of customers per day
14. Student ID number
15. Phone number
16. Number of years of experience
17. Weight of a person
18. Time taken to finish an exam
19. Height
20. Temperature
21. Length of a table
22. Years of education completed
23. House number
24. Bank account number

### **Question 5: True or False. Briefly explain your answer**

1. All numbers are quantitative variables
2. Continuous variables cannot take whole numbers
3. Discrete variables cannot have decimals
4. Age is always discrete

5. Phone numbers are quantitative

### **Question 6: Discussion**

1. Is “number of years” always discrete? Give two different situations

### **Question 7: Mini Case Study**

**Scenario:** A university conducts a survey by selecting **100 students out of a total of 3,000 students**.

Based on the scenario above, answer the following questions:

1. Identify the population
2. Identify the sample
3. State whether this is a census or a sample study
4. Give two possible variables that could be collected
5. Suggest one decision the university could make based on the results