

## Examrace

# Statistics MCQs-Data and Graphical Descriptive Statistics Part 1

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1. The South African government is concerned about the high incidence of HIV/AIDS in South Africa. They wish to estimate the true number of people in South Africa who are HIV positive. A random sample of 5000 people were tested and 1980 of them were HIV positive. What is the parameter of interest?

- a. The number of people in South Africa
- b. The 5000 people sampled
- c. The number of people in South Africa who are HIV positive
- d. The 1980 people sampled who were HIV positive
- e. None of the above

Answer: C

2. The South African government is concerned about the high incidence of HIV/AIDS in South Africa. They wish to estimate the true number of people in South Africa who are HIV positive. A random sample of 5000 people were tested and 1980 of them were HIV positive. What is the statistic?

- a. The 5000 people sampled
- b. All the people in South Africa
- c. The 1980 people sampled who were HIV positive
- d. Impossible to calculate from the given information
- e. None of the above

Answer: C

3. The South African government is concerned about the high illiteracy rates amongst adults in South Africa. They wish to estimate the true number of adults (over 18 years of age) in South Africa who are illiterate (that is, they cannot read or write in at least one language). A random sample of 10000 adults were interviewed and 1107 of them were found to be illiterate. What is the parameter of interest in this situation?

- a. The number of adults in South Africa

- b. The number of adults in South Africa who are illiterate
- c. The number of adults of the 10000 sampled who are illiterate
- d. The total number of people in South Africa

Answer: B

4. The South African government is concerned about the high illiteracy rates amongst adults in South Africa. They wish to estimate the true number of adults (over 18 years of age) in South Africa who are illiterate (that is, they cannot read or write in at least one language). A random sample of 10000 adults were interviewed and 1107 of them were found to be illiterate. What is the statistic in this situation?

- a. The number of adults in South Africa
- b. The number of adults in South Africa who are illiterate
- c. The number of adults of the 10000 sampled who are illiterate
- d. The total number of people in South Africa
- e. None of the above

Answer: C

5. The science faculty is trying to estimate the proportion of their students who have access to a computer at home. A random sample of 300 science students were interviewed. The population of interest in this experiment is:

- a. All registered UCT students who are in the science faculty
- b. All registered UCT students who have computers at home
- c. All registered UCT students
- d. The 300 science faculty students who were interviewed
- e. None of the above

Answer: A

6. The science faculty is trying to estimate the proportion of their students who have access to a computer at home. A random sample of 300 science students were interviewed. The statistic obtained in this experiment is:

- a. The proportion of the 300 science students interviewed who have computers at home
- b. The proportion all UCT students who have a computer at home
- c. The proportion of all UCT students who were interviewed
- d. The proportion of the interviewed students who are in the science faculty

e. None of the above

Answer: A

7. The commerce faculty is trying to estimate the proportion of their students who have access to the internet at home. A random sample of 500 commerce students were interviewed. The population of interest in this experiment is:

- a. All registered UCT students who have computers at home
- b. All registered UCT students
- c. The 500 commerce faculty students who were interviewed
- d. All registered UCT students who are in the commerce faculty
- e. None of the above

Answer: D

8. The commerce faculty is trying to estimate the proportion of their students who have access to the internet at home. A random sample of 500 commerce students were interviewed. The statistic obtained in this experiment is:

- a. The proportion all UCT students who have a computer at home
- b. The proportion of the 500 commerce students interviewed who have access to the internet at home
- c. The proportion of all UCT students who were interviewed
- d. The proportion of the interviewed students who are in the commerce faculty

Answer: B

9. Which of the following is an example of a ranked (ordinal) variable?

- a. Your favourite breakfast cereal
- b. Your monthly cell phone expenditure
- c. The rating (excellent, good, fair or poor) that you would give your stats lecturer
- d. The first three digits of your car's registration number
- e. Your favourite make of car

Answer: C

10. Which of the following is an example of a ranked (ordinal) variable?

- a. The rating (excellent, good, fair or poor) that you would give the service at a particular fast food chain

- b. Your favourite TV programme
- c. Your annual expenditure on clothing
- d. The first three digits of your cellphone number
- e. Your monthly cellphone expenditure

Answer: A

11. Which of the following is an example of a discrete random variable?

- a. The number of letters in the Greek alphabet
- b. The number of rectangles on a chess board
- c. The length of time it takes to download a program off the internet
- d. The number of years making up a century
- e. The number of students who pass STA100S each year

Answer: E

12. Which of the following is most likely a continuous quantitative variable?

- a. The number of litres of paint purchased at a hardware shop
- b. The number of goals scored by a footballer in the Coca-Cola Cup final
- c. The population of Egypt
- d. The number of litres of beer (to the nearest litre) sold by SAB annually
- e. The time taken to complete a particular crossword puzzle in a magazine

Answer: E

13. The manager of an estate-agency wishes to monitor the performance of her sales staff. She records the number of properties sold by each of the 15 staff members for a randomly chosen period of time. What type of variable is "number of properties sold"?

- a. quantitative and discrete
- b. quantitative and continuous
- c. qualitative and discrete
- d. qualitative and continuous
- e. None of the above

Answer: A

14. The daily percentage change (to the nearest percent) of an equity traded on the JSE was monitored for 100 days by an investment analyst. What type of variable is "daily percentage change"?

- a. quantitative and discrete
- b. quantitative and continuous
- c. qualitative and discrete
- d. qualitative and continuous
- e. None of the above

Answer: A

15. Which of the following is a qualitative variable?

- a. annual salary
- b. weight
- c. age
- d. number of siblings
- e. eye colour

Answer: E

16. Which of the following is a qualitative random variable?

- a. height of the cable car station on the top of Table Mountain in Cape Town
- b. distance in metres that you have walked already today
- c. nicotine content of a cigarette
- d. highest educational qualification of respondents in an interview
- e. None of the above

Answer: D

17. Which of the following is a quantitative random variable?

- a. height of the cable car station on the top of Table Mountain in Cape Town
- b. number of cents in R10.00
- c. number of letters in the alphabet
- d. number of people responding positively to the question "Do you enjoy your job?" during a telephone interview

e. None of the above

Answer: D

18. Which of the following is a qualitative variable?

- a. favourite brand of toothpaste
- b. number of people preferring shopping at Checkers to shopping at Pick 'n Pay
- c. class test 2 mark for a certain STA100 student
- d. number of shares on the JSE who have increased in value during a particular week
- e. None of the above

Answer: A

19. Which of the following statements involve descriptive statistics as opposed to inferential statistics?

- a. The South African Police Service reported that 578 murders were committed in Cape Town in 1997
- b. Based on a survey of 400 magazine readers, the magazine reports that 45% of its readers prefer articles related to health issues
- c. The Airports Company of South Africa samples 500 air traffic controllers in order to estimate the percent retiring due to job stress related illness
- d. Based on a sample of 300 professional tennis players, a tennis magazine reported that 25% of the parents of all professional tennis players did not play tennis
- e. None of the above

Answer: A

20. Which of the following statements involve inferential statistics as opposed to descriptive statistics?

- a. The South African Police Service reported that 578 murders were committed in Cape Town in 1997
- b. The Airports Company of South Africa reports that 20 air traffic controllers retired last year due to stress-related illnesses
- c. A class of 1543 STA100S students earned an average mark of 75.5% for class test 2
- d. Based on a sample of 500 subscribers, a local cellphone network provider estimates that 60% of its subscribers make at least one call to another cellphone per day
- e. None of the above

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Answer: D

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