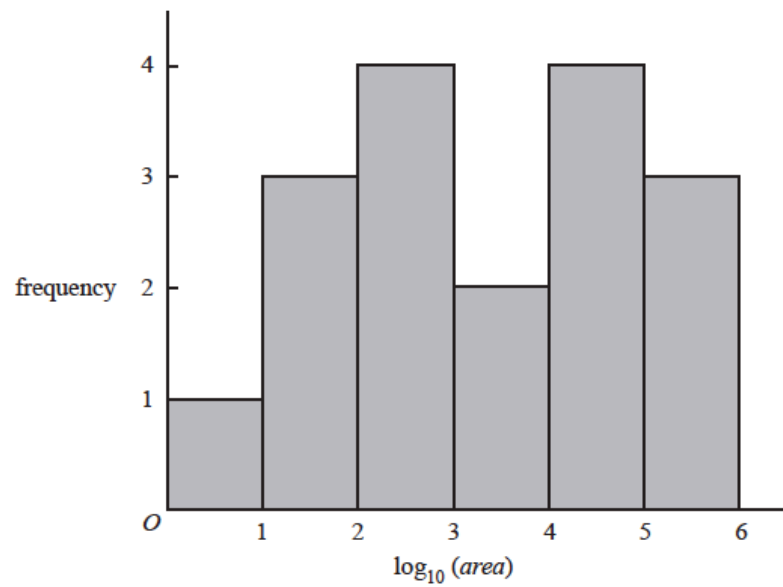


Warm up Number 5

2017 Exam 1

Question 4

The histogram below shows the distribution of the $\log_{10}(\text{area})$, with *area* in square kilometres, of 17 islands.

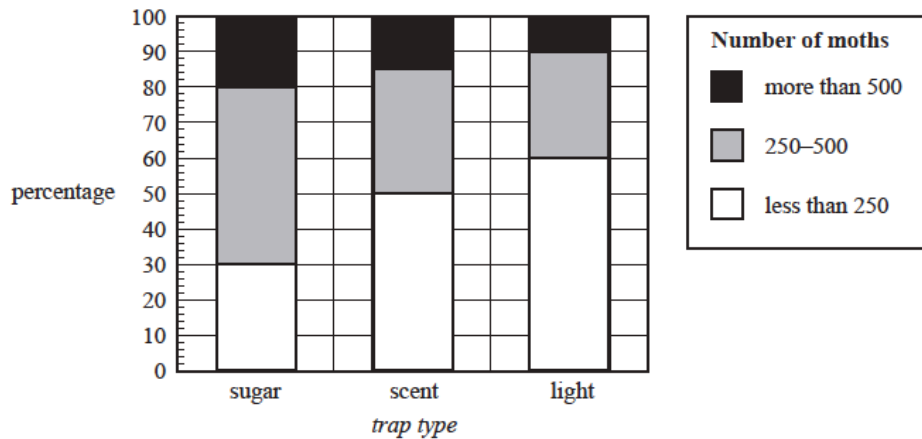


The median area of these islands, in square kilometres, is between

- A. 2 and 3
- B. 3 and 4
- C. 10 and 100
- D. 1000 and 10000
- E. 10000 and 100000

Use the following information to answer Questions 5–7.

A study was conducted to investigate the association between the *number of moths* caught in a moth trap (less than 250, 250–500, more than 500) and the *trap type* (sugar, scent, light). The results are summarised in the percentaged segmented bar chart below.



Question 5

There were 300 sugar traps.

The number of sugar traps that caught less than 250 moths is closest to

- A. 30
- B. 90
- C. 250
- D. 300
- E. 500

Question 6

The data displayed in the percentaged segmented bar chart supports the contention that there is an association between the *number of moths* caught in a moth trap and the *trap type* because

- A. most of the light traps contained less than 250 moths.
- B. 15% of the scent traps contained 500 or more moths.
- C. the percentage of sugar traps containing more than 500 moths is greater than the percentage of scent traps containing less than 500 moths.
- D. 20% of sugar traps contained more than 500 moths while 50% of light traps contained less than 250 moths.
- E. 20% of sugar traps contained more than 500 moths while 10% of light traps contained more than 500 moths.

Question 7

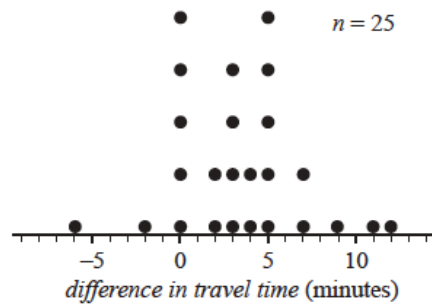
The variables *number of moths* (less than 250, 250–500, more than 500) and *trap type* (sugar, scent, light) are

- A. both nominal variables.
- B. both ordinal variables.
- C. a numerical variable and a categorical variable respectively.
- D. a nominal variable and an ordinal variable respectively.
- E. an ordinal variable and a nominal variable respectively.

2018 Exam 1

Use the following information to answer Questions 1 and 2.

The dot plot below displays the *difference in travel time* between the morning peak and the evening peak travel times for the same journey on 25 days.



Question 1

The percentage of days when there was five minutes *difference in travel time* between the morning peak and the evening peak travel times is

- A. 0%
- B. 5%
- C. 20%
- D. 25%
- E. 28%

Question 2

The median *difference in travel time* is

- A. 3.0 minutes.
- B. 3.5 minutes.
- C. 4.0 minutes.
- D. 4.5 minutes.
- E. 5.0 minutes.

Use the following information to answer Questions 3–5.

The pulse rates of a population of Year 12 students are approximately normally distributed with a mean of 69 beats per minute and a standard deviation of 4 beats per minute.

Question 3

A student selected at random from this population has a standardised pulse rate of $z = -2.5$

This student's actual pulse rate is

- A. 59 beats per minute.
- B. 63 beats per minute.
- C. 65 beats per minute.
- D. 73 beats per minute.
- E. 79 beats per minute.

Question 4

Another student selected at random from this population has a standardised pulse rate of $z = -1$.

The percentage of students in this population with a pulse rate greater than this student is closest to

- A. 2.5%
- B. 5%
- C. 16%
- D. 68%
- E. 84%

Question 5

A sample of 200 students was selected at random from this population.

The number of these students with a pulse rate of less than 61 beats per minute or greater than 73 beats per minute is closest to

- A. 19
- B. 37
- C. 64
- D. 95
- E. 190

Question 6

Data was collected to investigate the association between the following two variables:

- *age* (29 and under, 30–59, 60 and over)
- *uses public transport* (yes, no)

Which one of the following is appropriate to use in the statistical analysis of this association?

- A. a scatterplot
- B. parallel box plots
- C. a least squares line
- D. a segmented bar chart
- E. the correlation coefficient r