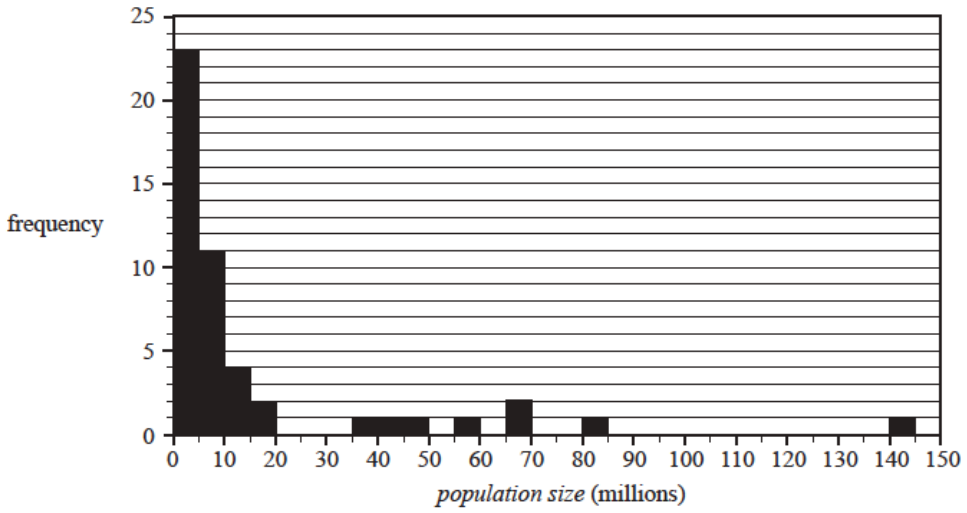
Warm up Number 6

2019 Exam 1

Use the following information to answer Questions 1–3.

The histogram below shows the distribution of the *population size* of 48 countries in 2018.



Data: Worldometers, <www.worldometers.info/>

Question 1

The number of these countries with a *population size* between 5 million and 20 million people is

A. 11

B. 17

C. 23

D. 34

E. 35

Question 2

The shape of this histogram is best described as

A. positively skewed with no outliers.

B. positively skewed with outliers.

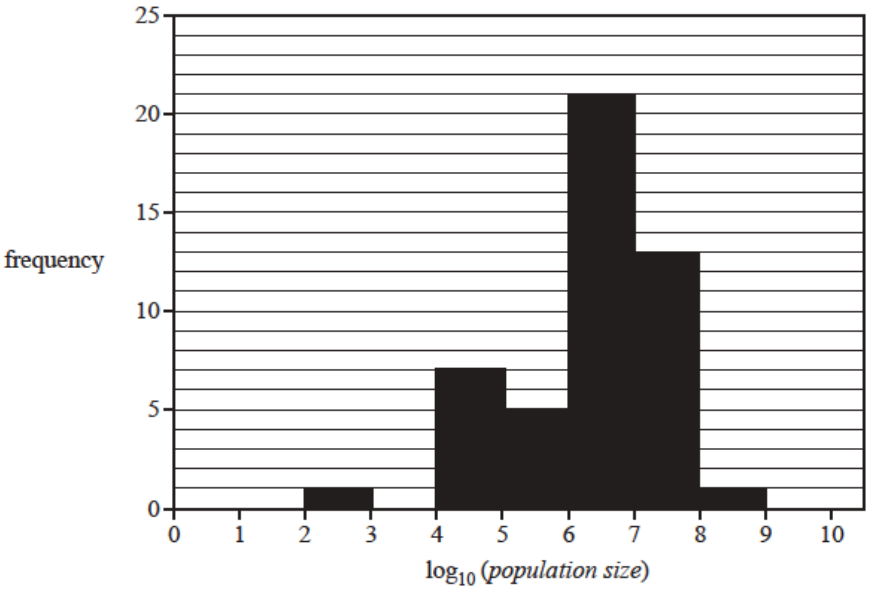
C. approximately symmetric.

D. negatively skewed with no outliers.

E. negatively skewed with outliers.

Question 3

The histogram below shows the *population size* for these 48 countries plotted on a $\log_{10}$ scale.



Data: Worldometers, <www.worldometers.info/>

Based on this histogram, the number of countries with a *population size* that is less than 100 000 people is

A. 1

B. 5

C. 7

D. 8

E. 48

Use the following information to answer Questions 4 and 5.

The stem plot below shows the distribution of mathematics *test scores* for a class of 23 students.

key: 4|2 = 42 $n = 23$

4	0	1	4	4		
5	2	7	9	9	9	
6	5	6	8	8	9	9
7	0	0	5	6	7	8
8	5	9				

Question 4

For this class, the range of *test scores* is

A. 22
B. 40
C. 45
D. 49
E. 89

Question 5

For this class, the interquartile range (IQR) of *test scores* is

A. 14.5
B. 17.5
C. 18
D. 24
E. 49

Question 6

The time taken to *travel* between two regional cities is approximately normally distributed with a mean of 70 minutes and a standard deviation of 2 minutes.

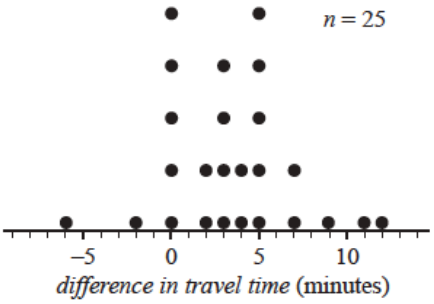
The percentage of *travel* times that are between 66 minutes and 72 minutes is closest to

A. 2.5%
B. 34%
C. 68%
D. 81.5%
E. 95%

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