

Data Interpretation and Comparison Test

Year

10

Calculator

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

Questions 1 – 4 refer to the data below.

Michael plays 9 holes of golf and scores the following number of strokes on each.

3, 4, 3, 5, 3, 2, 4, 5, 4

1. Show that the median of the data is 4.

Arrange in order 2, 3, 3, 3, 4, 4, 4, 5, 5
Median = 4

2. Find the upper and lower quartiles of the data.

Upper Q = 4.5 Lower Q = 3

3. Find the interquartile range of the data.

Interquartile Range = 4.5 - 3
= 1.5

4. Write a 5 number summary for the data.

2, 3, 4, 4.5, 5

Questions 5 and 6 refer to the information below.

Thelma records the scores she throws in a game of darts.

7, 17, 26, 33, 45, 54, 57, 59,

They were 57, 26, 45, 54, 7, 17, 63, 59, 140, 33.

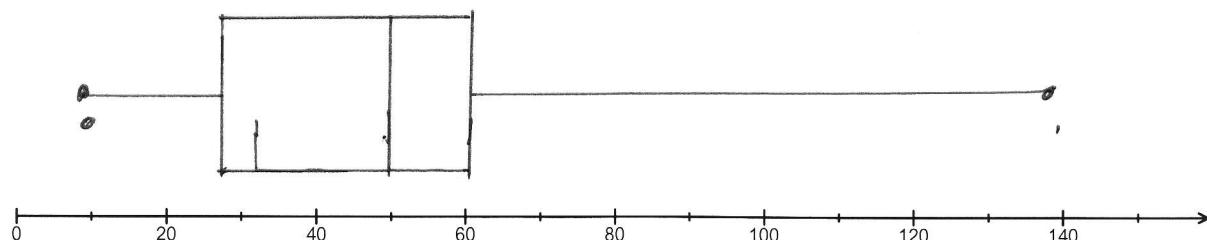
63, 140

5. Write a 5 number summary for the scores.

7, 26, 49.5, 59, 140

Data Interpretation and Comparison Test

6. Draw a box and whisker plot for the data, using the scale below.



Questions 7 – 10 refer to the following information.

Josie and Adam record how much they spend each day for ten days, to the nearest \$5.

Adam 15, 30, 10, 20, 210, 20, 15, 15, 30, 25
Josie 45, 55, 60, 20, 30, 30, 35, 25, 20, 70

7. Find the median of the two sets of scores.

Adam 20

Josie 32.5

8. Find the interquartile range of the two sets of scores.

Adam $30 - 15 = 15$

Josie $55 - 25 = 30$

9. Write a 5 number summary for the two sets of data.

Adam 10 15 20 30 210

Josie 20 25 32.5 55 70

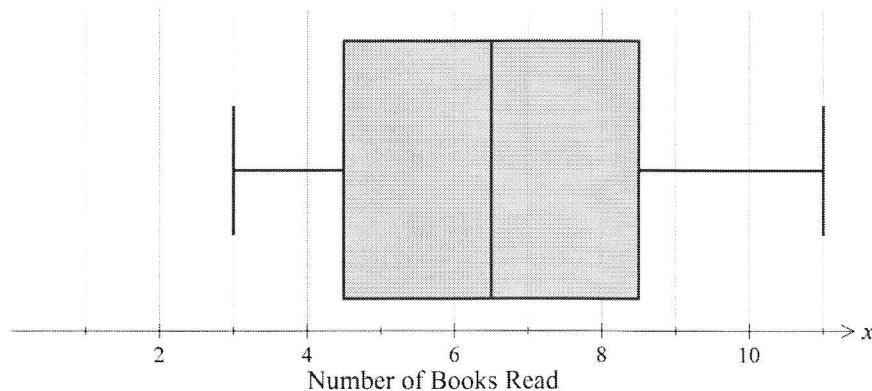
10. Use your answers from above to compare the spending patterns of Josie and Adam.

Adams spending pattern was more lower & more compact with one outlier
Josies was overall higher

Data Interpretation and Comparison Test

Questions 11 – 12 refer to the box and whisker plot below.

Twelve friends record the number of books they have read in the past month.



-
11. What is the range of the scores?

$$11 - 3 = 8$$

-
12. What is the interquartile range of the scores?

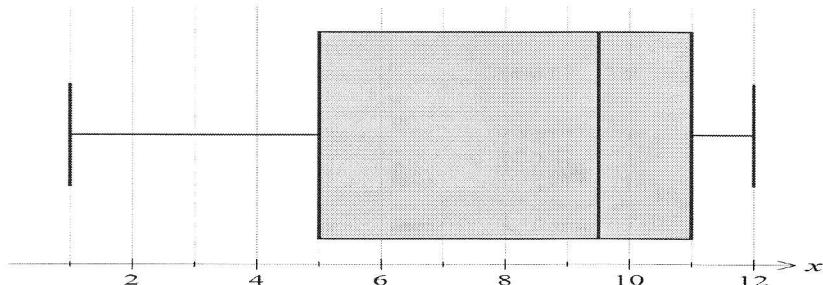
$$8.5 - 4.5 = 4$$

Year 10
Data Interpretation and Comparison Test **Calculator**
Multiple Choice Section

Name : _____

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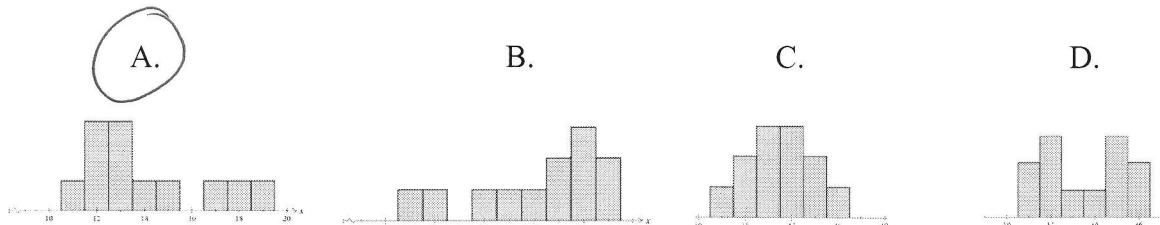
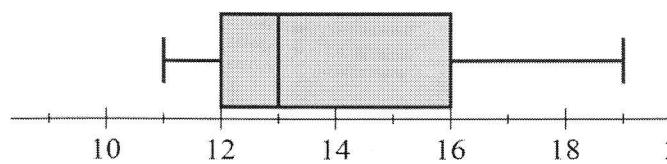
Questions 1 – 3 refer to the box plot which shows the test results for a class.



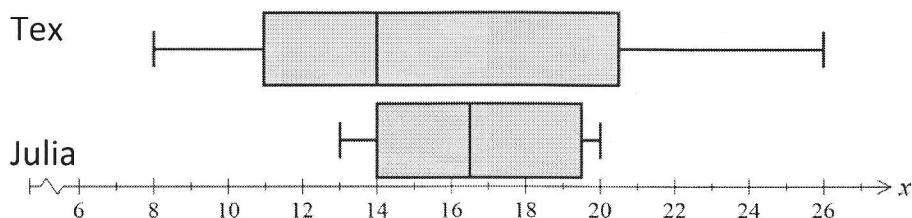
-
1. What is the median of the marks?
- A. 5 B. 8 C. 9.5 D. 11
-
2. What is the interquartile range of the marks?
- A. 5 B. 6 C. 9.5 D. 11
-
3. The data could be described as:
- A. symmetrical B. positively skewed
C. negatively skewed D. unskewed.
-
4. Kayla wrote a five number summary of her study times over the last fortnight. The upper quartile is has been smudged. If the interquartile range was 6, what was the upper quartile?
- 1.5, 2.5, 4, ~~8~~, 9
- A. 7.5 B. 8.5 C. 10 D. 15
-

Data Interpretation and Comparison Test

5. Which histogram could represent the same data as this box and whisker plot?



Questions 6 – 8 refer to the box plots shown which shows the scores that two entertainers were awarded by audience members at a show.



6. What is difference in the ranges of their scores?

- A. Tex had a range that was 6 more than Julia's.
- B. Tex had a range that was 5 less than Julia's.
- C. Tex had a range that was 11 more than Julia's.
- D. Tex had a range that was 18 more than Julia's.

7. What is difference in the interquartile ranges?

- A. Tex had a interquartile range that was 4 more than Julia's.
- B. Tex had a interquartile range that was 5 more than Julia's.
- C. Tex had a interquartile range that was 9.5 more than Julia's.
- D. Tex had a interquartile range that was 11 more than Julia's.

8. Which is not true?

- A. Tex's median was 2.5 lower than Julia's. ✓
- B. Tex's lowest score was 7 lower than Julia's. ✗
- C. Tex's maximum score was 6 higher than Julia's. ✓
- D. Tex's median was the same as Julia's lower quartile. ✓

Data Interpretation Test Calculator

Year
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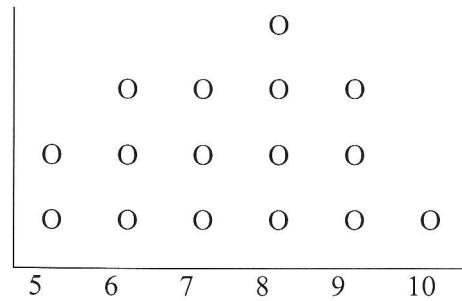
Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

Questions 1 to 3 refer to the dot plot below

The dot plot shows the scores on a ten question magazine quiz by a group of friends.



1. What is the median of the scores in the dot plot?

$$\text{Median} = \frac{7+8}{2} = 7.5$$

2. How many friends took the quiz?

16

3. What is the mean score for the group?

$$\text{Mean} = \frac{118}{16} = 7.375$$

4. In a small business, the salaries of its eight employees are:

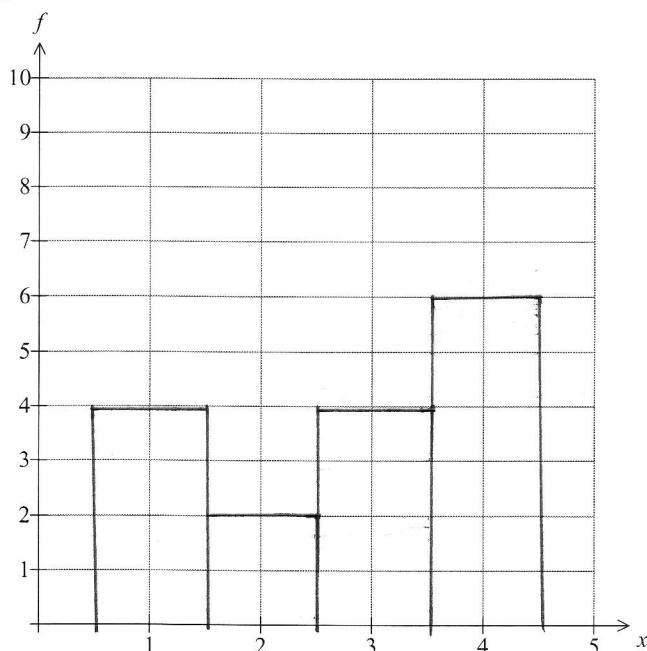
| | | | |
|-----------|-----------|-----------|-----------|
| \$ 28 000 | \$ 17 000 | \$ 21 000 | \$ 36 000 |
| \$ 41 000 | \$ 53 000 | \$ 32 000 | |

What is the median salary of the employees?

$$\text{Median} = \frac{28000 + 32000}{2} = 30000$$

5. Draw a frequency histogram from the table below on the axes provided.

| Score | Frequency |
|-------|-----------|
| 1 | 4 |
| 2 | 2 |
| 3 | 4 |
| 4 | 6 |



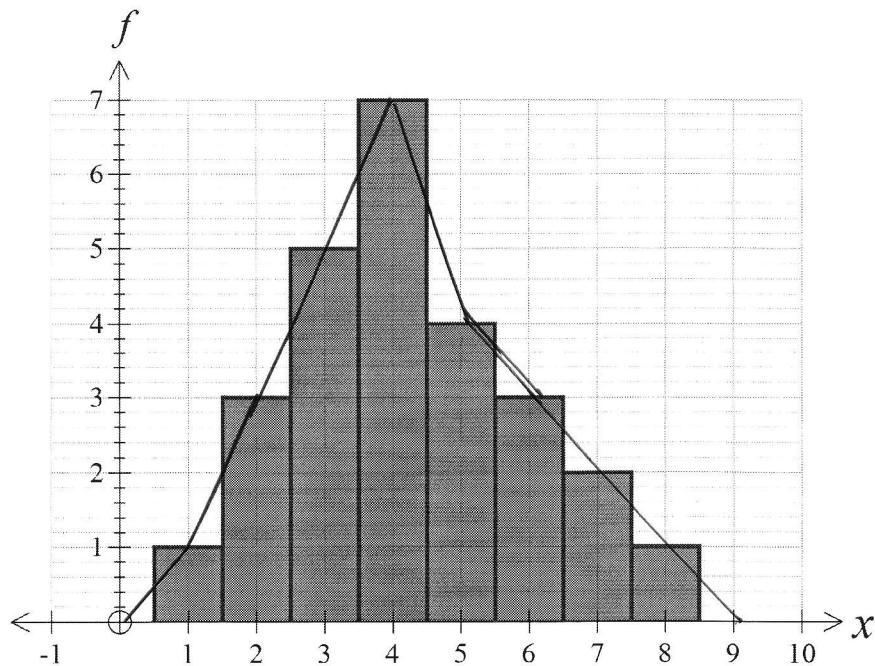
6. Complete the stem and leaf plot from the data below which are the distances jumped by athletes in a long jump practice session.

| | | | | | |
|-----|-----|-----|-----|-----|-----|
| 1.2 | 1.3 | 2.1 | 3.1 | 1.4 | 4.1 |
| 3.2 | 2.2 | 1.4 | 3.2 | 2.2 | 3.3 |
| 4.3 | 2.3 | 3.4 | 1.5 | 2.3 | 4.4 |
| 4.5 | 3.4 | 2.3 | 3.4 | 1.8 | 2.4 |
| 3.5 | 2.5 | 2.6 | 1.9 | 3.6 | 2.9 |

| Stem | Leaf |
|------|---------------------|
| 1 | 2 3 4 4 5 8 9 |
| 2 | 1 2 2 3 3 3 4 5 6 9 |
| 3 | 1 2 2 3 4 4 4 5 6 |
| 4 | 1 3 4 5 |

Key 1|5 = 1.5

Questions 6 – 8 refer to the histogram below.



6. Complete the frequency table from the histogram.

| Score | Frequency | Score \times Frequency |
|-------|-----------|--------------------------|
| 1 | 1 | 1 |
| 2 | 3 | 6 |
| 3 | 5 | 15 |
| 4 | 7 | 28 |
| 5 | 4 | 20 |
| 6 | 3 | 18 |
| 7 | 2 | 14 |
| 8 | 1 | 8 |

$$\sum f = 26 \quad \sum fx = 110$$

7. Find the mean for the data.

$$\text{Mean} = \frac{110}{26} = 4.2$$

8. Add a frequency polygon (line graph) to the graph above.

Questions 9 and 10 refer to the Frequency Distribution table shown below.

| Score (x) | Frequency (f) | Cumulative Frequency |
|-----------|---------------|----------------------|
| 2 | 3 | 3 |
| 3 | 5 | 8 |
| 4 | 5 | 13 |
| 5 | 7 | 20 |
| 6 | 8 | 28 |
| 7 | 6 | 34 |
| 8 | 4 | 38 |
| 9 | 2 | 40 |

9. Complete the Cumulative Frequency column on the table above.

10. Find the median of the scores.

Want the 20th & 21st scores which are 5 and 6.

$$\text{Median} = \frac{5+6}{2} = 5.5$$

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Data Interpretation Test
Calculator

Multiple Choice Section

Name : _____

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Questions 1 – 4 refer to the following table.

The results of a year 9 test out of 20 are summarised in the table below.

| Score (x) | Frequency (f) | fx | Cumulative Frequency |
|---------------|-------------------|------|----------------------|
| 12 | 2 | 24 | 2 |
| 13 | 6 | 78 | 8 |
| 14 | 8 | 112 | 16 |
| 15 | 11 | 165 | 27 |
| 16 | 4 | 64 | 31 |
| 17 | 9 | 153 | 40 |

$$\sum f =$$

$$\sum fx =$$

1. The number of students who sat the test was:

A. 6 B. 17 C. 40 D. 153

2. The median score was:

A. 13 B. 14 C. 15 D. 16

3. The range of scores was :

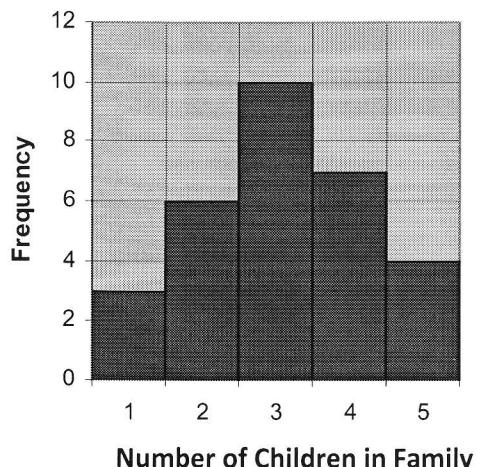
A. 2 B. 5 C. 12 D. 17

4. The mean of the scores was:

A. 14.9 B. 15.0 C. 25.5 D. 40

Questions 5 - 7 refer to the frequency histogram shown:

The histogram shows the results of a survey of the number of children in the family.



5. The modal number of children was:

A 10 B 3 C 4 D 7

6. The total number of families surveyed was:

A 5 B 93 C 30 D 10

7. The mean number of children was:

A. 6 B. 5 C. 3.1 D. 3

Questions 8 – 10 refer to the Stem and leaf plot below.

The stem and leaf plot shows the heights of buildings in a section of the CBD of a city.

| Stem | Leaf |
|------|-----------------|
| 11 | 2 3 5 5 7 9 |
| 12 | 0 3 4 5 7 8 8 9 |
| 13 | 0 1 1 1 2 4 6 8 |
| 14 | 1 3 |

Key 11|2 = 11.2 metres

8. What is the modal height of the buildings?

A 11.5 metres B 12.7 metres C 12.8 metres D 13.1 metres

9. What is the median height of the buildings?

A 11.5 metres B 12.7 metres C 12.8 metres D 13.1 metres

10. What is the mean height of the buildings (correct to one decimal place)?

A 12.6 metres B 12.7 metres C 12.8 metres D 13.1 metres

Data Comparison Test Calculator

Year

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Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

Questions 1 – 4 refer to the two sets of scores below.

The data shows the times (in minutes) for training runs over the same course by two friends.

Damien 20, 22, 30, 21, 28 and 22

Brett 22, 19, 25, 24, 18 and 32

-
1. Who had the higher median time, and by how much was it higher?

Damien 22 Brett 23

Brett higher by 1

2. Who had the higher mean time, and by how much was it higher?

Damien 23.83 Brett 22.33

Damien higher by 0.5

3. What can be said about the mode of each runner's times?

Damien's mode was 22 and Brett

had no modal score.

4. Compare the ranges of the times for the two runners.

Damien's range was 10 and Brett's 14

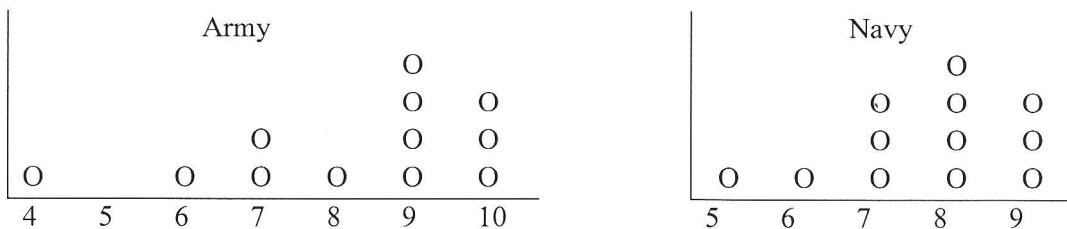
Brett's range was higher by 4.

5. Did either runner have an outlier in their times, and if so, what was it?

Brett had an outlier of 32.

Data Comparison Test

Questions 6 - 8 refer to the dot plots below which show the scores (out of 10) on a firing range by the Army and Navy teams.



6. Which team had the highest mean and what was it?

Army 8.16 Navy = 7.58
Army was highest.

7. Compare the mode and median of the two teams.

Army's mode was 9 & Navy's 8.
Army median was 9 & Navy 8.

8. Use statistical measures and terminology to explain which team was more consistent?

Navy was more consistent as scores have smaller range.

Questions 9 to 11 refer to the back to back stem and leaf plot below.

Scores in Season 2010

The Bulls and Giants both played the same number of games in a football competition.

| Bulls | 0 | Giants |
|-------|---|--------|
| 9 | 7 | 6 |
| 6 | 5 | 6 |
| 5 | 4 | 5 |
| 4 | 3 | 2 |
| 3 | 2 | 2 |
| 2 | 1 | 6 |
| 1 | 0 | 6 |
| 0 | | 8 |

The points that they scored in each game are shown in the stem and leaf plot.

9. Compare the medians of the two team's scores.

Bulls 18 Giants 19.5
Giants median was 1.5 higher.

10. Compare the mode of the two team's scores.

Bulls 15 Giants 16 and 18
Both Giants modes greater than Bulls

11. Which team's scores had the greater range and what was the difference?

Bulls 54 Giants 50
Bulls greater by 4

Data Comparison Test

Calculator

Year

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Multiple Choice Section

Name : _____

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Questions 1 - 4 refer to the information below.

The stem and leaf plot shows the number of sales per week for two employees, Jones and Smith, over a 14 week period.

| Jones | Smith |
|-------|----------|
| 42 | 0 |
| 7654 | 1 455556 |
| 842 | 2 34667 |
| 65 | 3 56 |
| 655 | 4 |
| | 5 7 |

1. What is the median number of sales, for Jones and Smith respectively?

- A. 23 and 23.5. B. 22 and 23
 C. 26 and 26.5 D. 24 and 26

2. What is the modal number of sales, for Jones and Smith respectively?

- A. 23 and 23.5. B. 22 and 23
 C. 45 and 26 D. 45 and 15

3. Which employee had an outlier in their sales, and what was it?

- A. Jones with 2 B. Jones with 42
 C. Smith with 45 D. Smith with 57.

4. What is the range of the sales of Jones and Smith respectively?

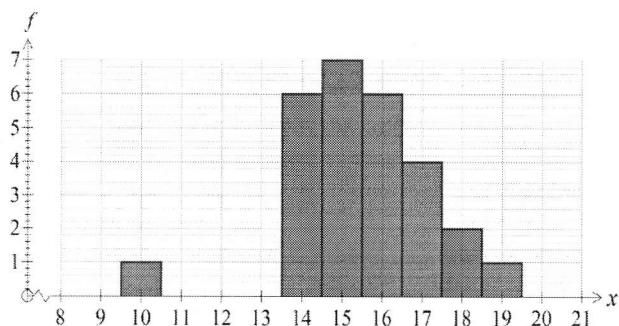
- A. 41 for both. B. 44 and 43
 C. 43 for both D. 45 and 41

Data Comparison Test

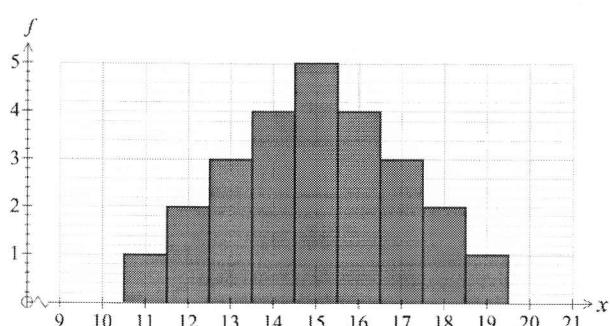
Questions 5 – 7 refer to the graphs below.

The two histograms show the ages of the members of two martial arts gyms.

Gym A



Gym B



5. Which is a good description of the data for each gym?

- A. Gym A is symmetrical data while Gym B is skewed data with an outlier.
- B. Gym B is symmetrical data while Gym A is skewed data with an outlier.
- C. Gym A is symmetrical data with an outlier while Gym B is skewed data.
- D. Gym B is symmetrical data with an outlier while Gym A is skewed data.

6. Which is **not** true?

- A. The ages at Gym A have a range of 9 years.
- B. The ages at Gym B have a range of 9 years.
- C. The ages at Gym A have a median of 15 years.
- D. The ages at Gym B have a median of 15 years.

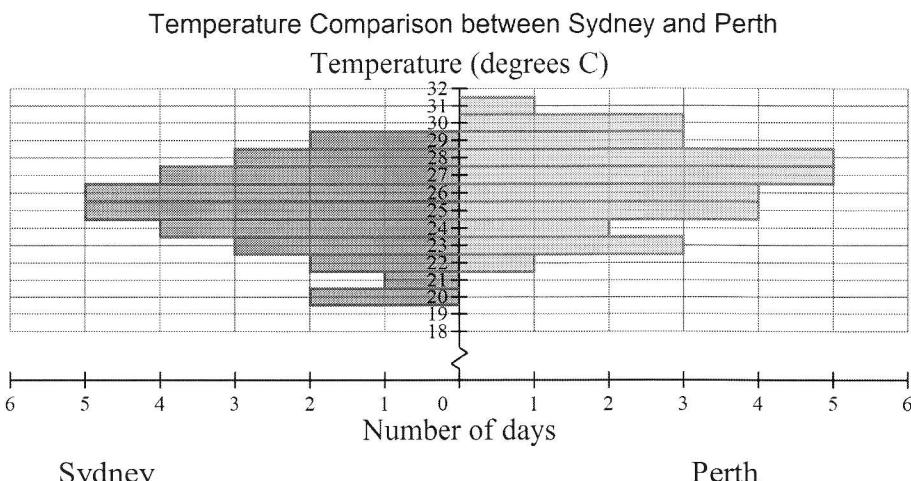
7. Which is **not** true?

- A. The ages at Gym A have a mode of 15 years.
- B. The ages at Gym B have a mode of 15 years.
- C. The ages at Gym A have a mean of 15 years.
- D. The ages at Gym B have a mean of 15 years.

Data Comparison Test

Questions 8 -10 refer to the graph below.

The back to back histogram compares Sydney and Perth temperatures for a month.



8. By how much was Perth's median temperature higher than Sydney's?

- A. 1° C B. 2° C C. 3° C D. 4° C

9. How many days were in the month displayed?

- A. 28 days B. 29 days C. 30 days D. 31 days

10. What can be said about Perth's mean temperature for the month?

- A. It is about the same as Sydney's.
 - B. It is about 1.5°C cooler than as Sydney's.
 - C. It is about 1.5°C warmer than as Sydney's
 - D. It is about 3.5°C warmer than as Sydney's

Bivariate Data Test

Non Calculator

Year

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Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

Questions 1 to 4 refer to the table below.

Weekly Incomes for 15 – 19 year olds.

The table shows the incomes for 15-19 year olds in a local government area.

| Income Range | Males | Females |
|-----------------|-------|---------|
| No income | 180 | 220 |
| \$1-\$149 | 175 | 184 |
| \$150-\$249 | 80 | 63 |
| \$250-\$399 | 87 | 60 |
| \$400-\$599 | 48 | 12 |
| \$600-\$799 | 16 | 6 |
| \$800-\$999 | 6 | 4 |
| \$1,000 or more | 8 | 1 |
| | Total | 600 |
| | | 550 |

1. What percentage of males had an income of \$600 or more?

$$\frac{30}{600} = 5\%$$

2. What percentage of females had an income of \$600 or more?

$$\frac{11}{550} = 2\%$$

3. Which gender had the greater percentage of people with no income, and by how much was it greater?

$$\text{Male } \frac{180}{600} = 30\% \quad \text{Female } \frac{220}{550} = 40\%$$

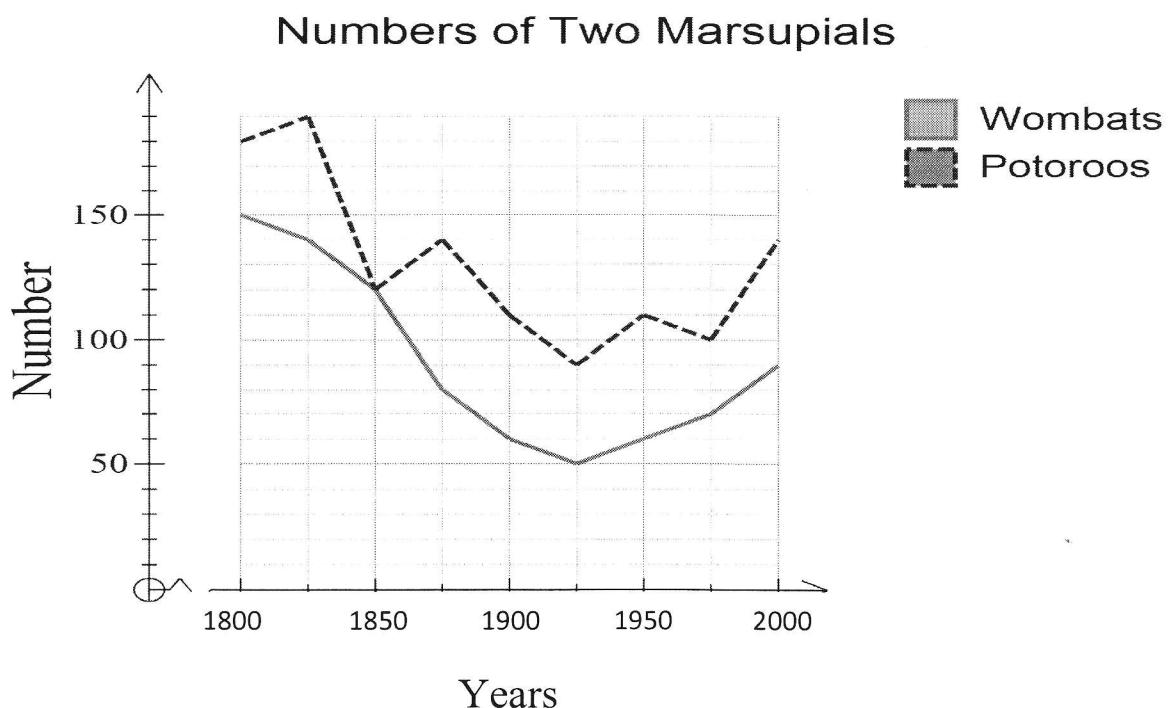
Females were greater by 10%.

4. Describe the difference in the distribution of income for males compared to females.

Females are generally lower paid with more with no income & fewer in higher bands.

Questions 5 – 8 refer to the graph below.

The graph shows the population of two species of marsupial in a bushland area over a period of 200 years.



5. How many less Potoroos were there in 1900, compared to 1800?

$$1900 - 110 \quad 1800 - 180$$

There were 70 less in 1900

6. Land clearing began in 1825, what effect did it have on the population of the two species?

Potoroos began to decline suddenly while wombats continued to decline.

7. A National Park was established on part of the bushland. Which year do you think it was? Explain your answer.

Most likely 1925 as both show an increase after that time.

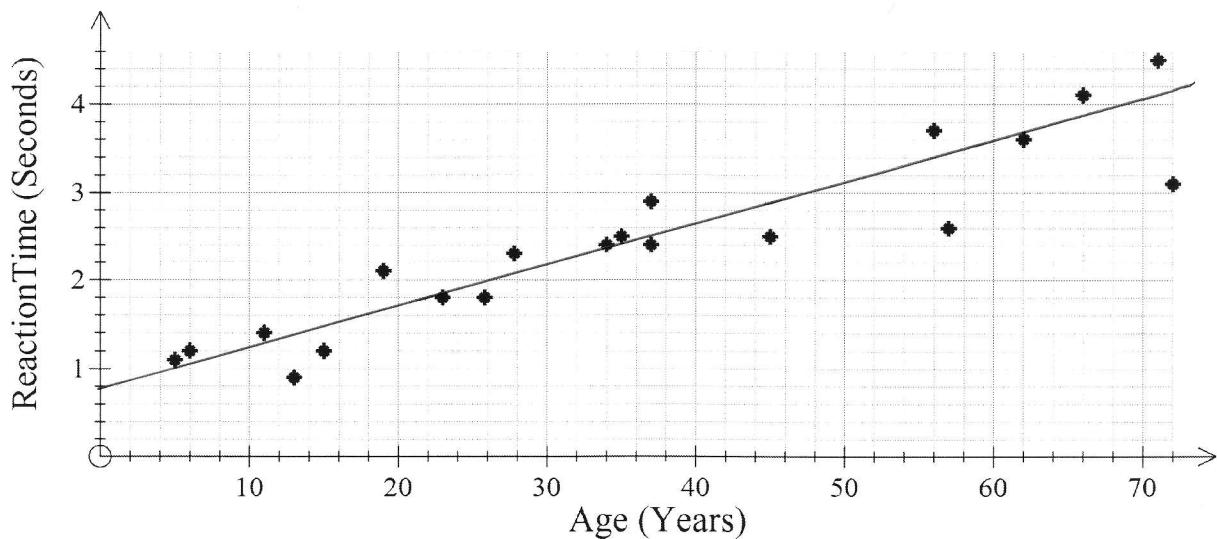
8. One species was more volatile in its responses to changes to its environment. Which species do you think this was? Explain your answer.

Potoroos as their numbers fluctuated, probably effected by environmental changes.

Questions 9 – 12 refer to the graph below.

The graph compares reaction times on a computer test with the age of the participants.

Scatterplot of Reaction Times against Age



9. How many people had a reaction time of less than 2 seconds?

7 people

10. How many people were aged over 60 years?

4 people

11. What percentage of people who were aged between 20 and 50 had a reaction time less than 2 seconds?

$$\frac{2}{8} = 25\%$$

12. Draw a line of best fit on the graph.

Bivariate Data Test

Calculator

Year

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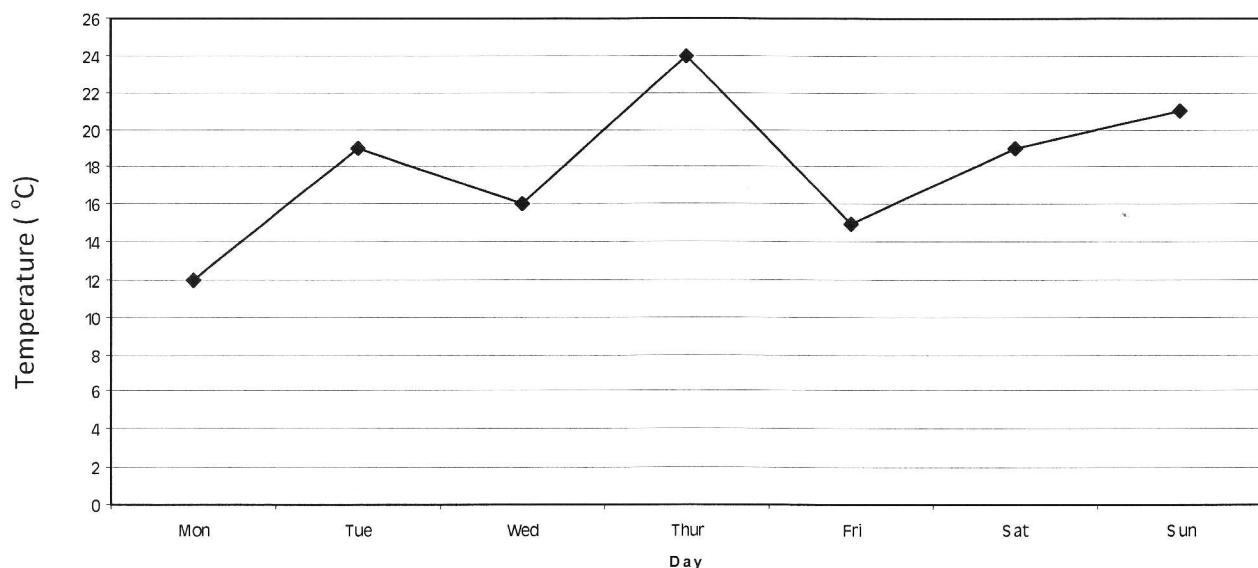
Multiple Choice Section

Name : _____

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Questions 1 -4 refer to the graph below.

Temperatures in a Week at Clarence



1. What was the maximum temperature during the week?

- A. 12° B. 21° C. 24° D. 26°

2. What was the temperature range for the week?

- A. 12° B. 21° C. 24° D. 16°

3. Which days recorded the same temperature?

- A. Thursday and Sunday B. Monday and Friday
 C. Wednesday and Friday D. Tuesday and Saturday

Bivariate Data Test

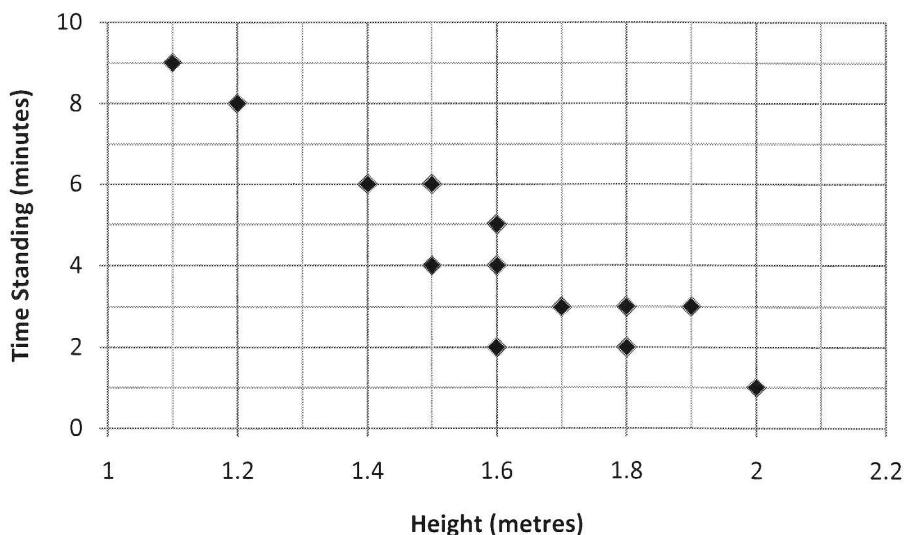
4. Temperature is an example of:
- A. Continuous quantitative data. B. Discrete quantitative data
C. Continuous categorical data D. Discrete categorical data
-
5. An election is called and a newspaper rings 1000 randomly selected people in 20 electorates in different parts of the state to ask them about their voting intentions.

This is an example of:

- A. A biased census. B. A biased sample.
C. An unbiased sample. D. An unbiased census.
-

Question 6 – 8 refer to the graph below.

The scatter graph shows the results of a survey which compares the time spent standing at a concert to the height of the individuals.

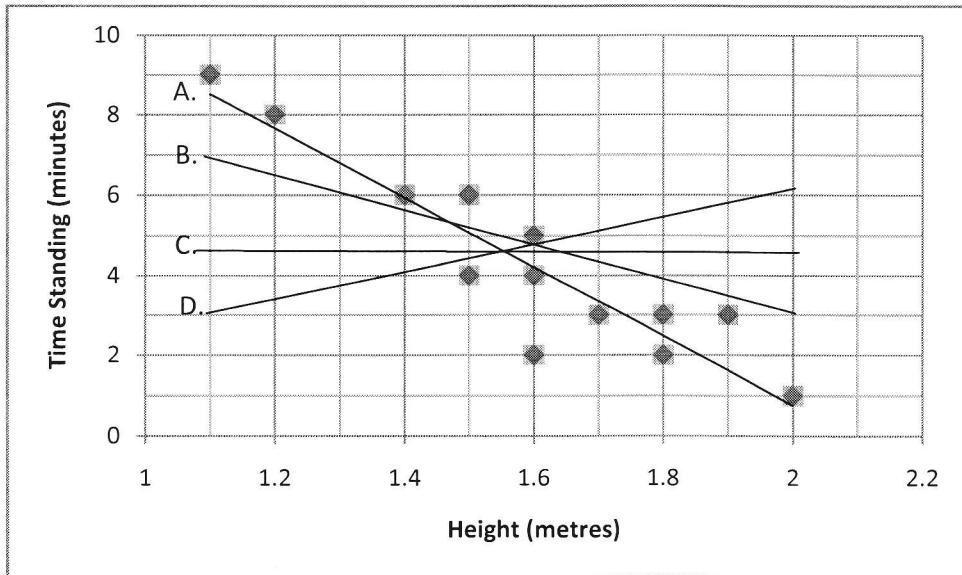


-
6. How many people were included in the survey?
- A. 2 B. 10 C. 13 D. 15
-
7. What percentage of people were 1.8 metres in height or more?
- A. 31% B. 15% C. 23% D. 44%
-
8. Of those who were standing for longer than 4 minutes, what percentage were over 1.4 metres in height?
- A. 20% B. 25% C. 30% D. 40%
-

Bivariate Data Test

Questions 9 and 10 refer to the graph below.

Four students try to draw a line of best fit for the scatter plot.



9. Which of the lines (A, B, C or D) would be the line of best fit for the scatter plot?

10. Which of the lines (A, B, C or D) has a positive gradient?

Basic Statistics Test

Non Calculator

Year

9

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

1. Five friends earn the following marks on a test: 13, 25, 16, 12 and 19.

Find the mean (average) of their marks.

$$\text{Mean} = \frac{85}{5} = 17$$

2. Karen scores the following scores in 10 shots at a dartboard.

13, 5, 16, 12, 21, 45, 20, 5, 57 and 19.

Find the median of her scores.

$$\text{Median} = \frac{16+19}{2} = 17.5$$

3. Harry plays seven games of basketball and scores the following number of points,

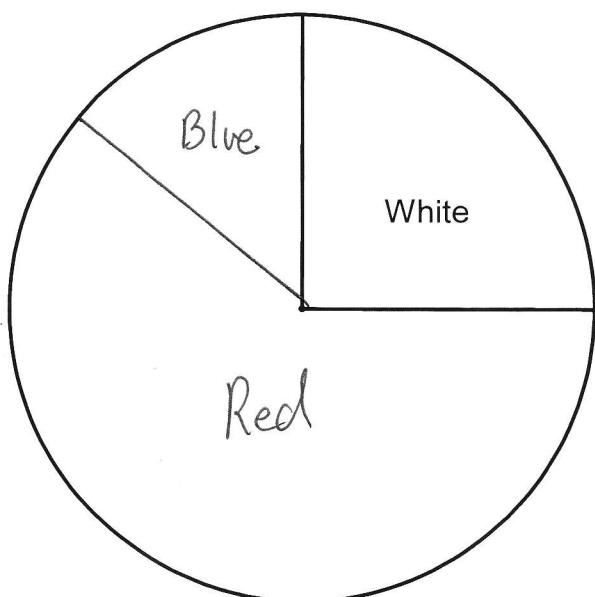
13, 15, 6, 12, 20, 14 and 19.

What is the range of his scores?

$$\text{Range} = 20 - 6 = 14$$

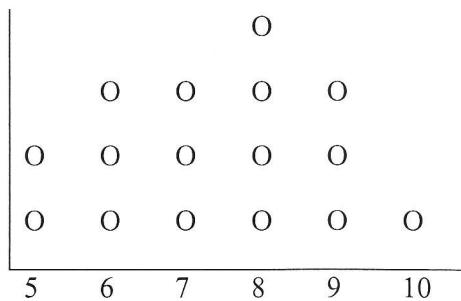
4. Complete the sector graph below of car colours in a carpark.

| Colour | Percent | Angle |
|--------|---------|-------------|
| Red | 62.5% | 225° |
| Blue | 12.5% | 45° |
| White | 25% | 90° |



Basic Statistics Test

5. What is the median of the scores shown in the dot plot.



Score out of 10

$$\text{Median} = \frac{7+8}{2} = 7.5$$

Questions 6 - 9 refer to the frequency table below.

| Score (x) | Frequency (f) | fx | Cumulative Frequency |
|-----------------|---------------|-------------------|----------------------|
| 6 | 4 | 24 | 4 |
| 7 | 6 | 42 | 10 |
| 8 | 10 | 80 | 20 |
| 9 | 5 | 45 | 25 |
| $\Sigma f = 25$ | | $\Sigma fx = 191$ | |

6. Complete the table.
-

7. What is the mode of the scores?

8

8. What is the median of the scores?

8

(13th score)

9. What is the mean of the scores?

$$\text{Mean} = \frac{191}{25} = 7.64$$

Basic Statistics Test
Calculator

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Multiple Choice Section

Name : _____

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1. The median of the scores 5, 8, 9, 17, 6, 3 and 2 is :

A. 2

B. 17

C. 6

D. 50

2. The mean of the scores 15, 12, 14, 11, 17, and 21 is :

A. 18

B. 21

C. 72.5

D. 15

3. The mode of the scores 2, 12, 4, 3, 7, 2, 5, 7, 4, and 7 is :

A. 7

B. 2

C. 4

D. 2, 4 and 7.

Questions 4 - 6 refer to the results of a survey of student masses shown in the stem and leaf plot.

| | |
|---|----------|
| 4 | 33578 |
| 5 | 236699 |
| 6 | 33455599 |
| 7 | 0448 |

4. The mean of the masses is;

A. 35

B. 60

C. 63

D. 65

5. Which statement is correct about the masses ;

A.

the mode is 65 and the median is 63

C.

the mode is 65 and the median is 60

B.

the mode is 60 and the median is 63

D.

the mode is 63 and the median is 65

6. The range of the masses is;

A. 3

B. 5

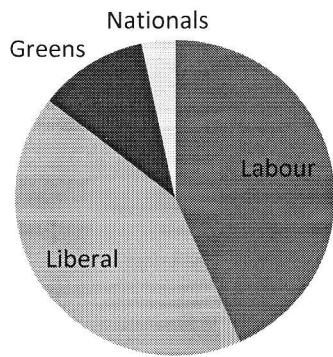
C. 27

D. 35

Basic Statistics Test

Questions 7 – 8 refer to the pie chart below, which shows the voting intentions in West Ham.

Voting in West Ham electorate



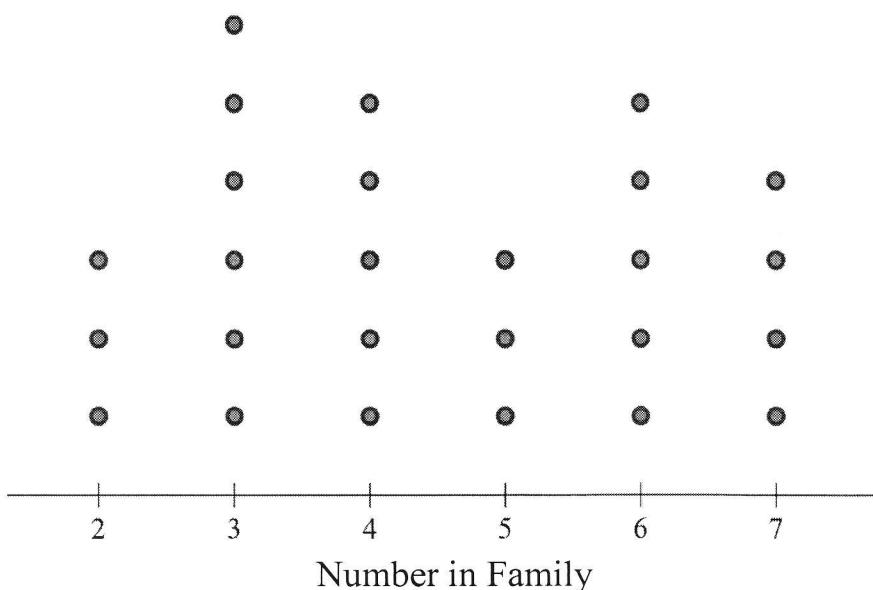
7. Which party had the second least number of votes

- A. Labour B. Liberal
C. Greens D. Nationals

8. Which of the following pairs of parties would have more than 50% of the vote between them?

- A. Labour and Nationals B. Liberal and Nationals
C. Labour and Greens D. Greens and Nationals

Questions 9 – 11 refer to the dot plot below, which shows the size of families in a housing subdivision.



9. The mean family size is;

- A. 3.5 B. 4 C. 4.5 D. 5

10. Which median family size is;

- A. 3.5 B. 4 C. 4.5 D. 5

11. The range of the data is;

- A. 3.5 B. 4 C. 4.5 D. 5