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| Year | Mathematics Test  Data Analysis | **Calculator Allowed**  **Test** |
|  | Name |  |

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| **Answer all questions in the spaces provided on this test paper by**  **Writing the answer in the box provided.**  **or**  **Shading in the bubble for the correct answer from the four choices provided.**  **or**  **Writing your answer on the lines provided.**  **Show any working out on the test paper.** | |
| 1. | Alex collects data on the height of her classmates. This data is;  Quantitative and Continuous Categorical Quantitative and Discrete |
| 2. | Year 8 conducts surveys on the four subjects, listed below. Which survey is an example of collecting categorical data;  The ages of 100 students.  The masses of 100 students.  The head diameter of 100 students.  The favourite sports team of 100 students. |
| 3. | The students at Milltown High School collect the data listed below about aspects of school life.  Write the letter C in the box beside those which are examples of a Census.  Write the letter S in the box beside those which are examples of a Sample.  Choose the sixth name on every class roll to ask about uniform.  Measure the hand span of all students in the school.  Ask all the girls if they want to wear a new design of tunic.  Measure the reaction time of one third of the students. |
| 4. | The numbers of DVDs owned by 15 friends are listed below.  16, 17, 23, 25, 28, 15, 35, 16, 32, 19, 29, 45, 8, 12, 25  Find the median number of DVDs. |
| 5. | Hannah collects data on the number of pets owned by a sample of 18 families. The results are listed below.  2, 1, 2, 3, 4, 2, 3, 7, 6, 4, 3, 2, 1, 2, 3, 1, 2, 1  The mode of the data is    1 2 3 4 |
| 6. | A group of seven friends play a video game.  They play ten games and each records their high score.  Their high scores are given below.  1 470, 2 340, 2 010, 3 890, 1 240, 2 390, 2 660.  The range of their scores is: |
| 7. | Jarred collects data on the number of accidents each month at two intersections. The results are listed below:  Intersection A 6, 2, 4, 3, 4, 7, 3, 8, 3, 3, 2, 8  Intersection B 1, 8, 2, 8, 3, 6, 2, 3, 5, 8, 4, 8  The modes of the two sets of data are:  2 and 3 3 and 4 3 and 8 4 and 8 |
| 8. | Erin and Steph compare the number of points they scored in 10 games of netball.  Erin 5, 7, 10, 9, 8, 8, 7, 12, 9, 7  Steph 2, 4, 3, 7, 13, 3, 4, 8, 10, 3  Which is true?  Erin has a greater mode, but Steph has a greater range.  Steph has a greater mode, but Erin has a greater range.  Erin has a greater mode and a greater range.  Steph has a greater mode and a greater range. |
| 9. | The weekly hours spent on the internet by 8 friends is listed below:  6, 15, 9, 5, 14, 23, 5, 11  Which is correct?  The median is greater than the mean by 1 hour.  The mean is greater than the median by 1 hour.  The median is greater than the mean by 2 hours.  The mean is greater than the median by 2 hours. |
| 10. | The mean of Tatum’s times on six swims is 45 seconds. What time must she attain on the seventh swim to lower her mean time to 43 seconds? |
| 11. | Nena collects stickers when she travels. On 6 recent trips she collected the numbers of stickers below.  12, 15, 23, 14, 18, 14  After her seventh trip, the mode and median of her number of stickers were both 15.  How many stickers did she collect on the seventh trip? |
|  | Questions 12 to 15 refer to the frequency table below which gives the scores by a soccer team in 24 games.   |  |  |  | | --- | --- | --- | | Score | Frequency | fx | | (x) | (f) |  | | 0 | 5 |  | | 1 | 7 |  | | 2 | 5 |  | | 3 | 4 |  | | 4 | 1 |  | | 5 | 2 |  | |  | Σ f = | Σ fx = | |
| 12. | Complete the frequency table. (2 marks) |
| 13. | The mode of the scores is :  0 1 0 and 2 2 |
| 14. | The range of the scores is :  4 5 6 7 |
| 15. | The mean of the scores (correct to one decimal place) is: |

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|  | Questions 16 to 19 refer to the stem and leaf plot below.  The plot shows the number of minutes spent on study in a week by 28 students in a class.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 2 | 6 | 7 |  |  |  |  | | 3 | 0 | 7 | 7 | 7 |  |  | | 4 | 1 | 2 | 3 | 6 | 8 | 9 | | 5 | 1 | 2 | 5 | 5 |  |  | | 6 | 0 | 2 | 2 | 2 |  |  | | 7 | 4 | 6 |  |  |  |  | | 8 | 0 | 2 | 4 | 6 |  |  | | 9 | 2 | 5 |  |  |  |  |   The total number of minutes spent on study by all of the students is 1591 minutes. |
| 16. | The mean time spent on study is nearest to :  49.5 53.5 56.8 69.0 |
| 17. | Write down the range of the data.  Range = |
| 18. | The median of the data is :  49.5 53.5 56.8 69.0 |
| 19. | Write down the mode(s) of the data.  Mode(s) = |
|  | Questions 20 to 23 refer to the dot plot below.  The plot gives the number of phone calls per day received by 35 people.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  | o |  |  |  |  | o |  |  |  |  |  | |  | o |  |  |  | o |  |  |  |  | o |  |  |  |  |  | |  | o |  |  | o | o | o |  |  | o | o | o |  |  |  |  | | o | o | o |  | o | o | o | o |  | o | o | o |  |  |  |  | | o | o | o | o | o | o | o | o | o | o | o | o |  |  |  | o | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |   The total number of calls received by all of the people was 213. |
| 20. | The mean number of calls is :  5.7 6.1 14.2 16.3 |
| 21. | The median number of calls is :  5 5.5 6 6.5 |
| 22. | What is the range of the number of calls.  Range = |
| 23. | Write down the mode(s) of the number of calls.  Mode(s) = |
| 24. | Describe any clusters in the data.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 25. | Describe any outliers in the data.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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|  | Questions 26 – 28 refer to the information below.  The results on a quiz for two classes are shown on the back to back stem and leaf plot.  Class A Stem Class B   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  | 0 | 8 |  |  |  |  | |  |  |  |  | 3 | 1 | 6 | 7 | 8 |  |  | |  |  |  | 5 | 4 | 2 | 4 | 6 | 7 | 8 | 9 | |  |  | 5 | 4 | 2 | 3 | 2 | 6 | 7 | 8 |  | |  | 3 | 3 | 2 | 0 | 4 | 4 | 4 | 6 |  |  | | 8 | 5 | 4 | 3 | 1 | 5 | 3 | 6 |  |  |  | |  | 9 | 7 | 5 | 2 | 6 | 7 |  |  |  |  | |  |  | 7 | 4 | 3 | 7 |  |  |  |  |  | |
| 26. | Which is true?  Class A has 3 more students.  Class A has 1 more student.  Both classes have the same number of students.  Class B has 3 more students. |
| 27. | Which is true?  Class A has a greater mode and a greater median.  Class B has a greater mode and a greater median..  Class A has a greater mode, but Class B has a greater median.  Class B has a greater mode, but Class A has a greater median.. |
| 28. | Which class had better results on the quiz? Give reasons for your answer which include statistical measures.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| Year | Mathematics Test  Data Analysis | **Calculator Allowed**  **Test** |
|  | ANSWERS |  |

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| **Answer all questions in the spaces provided on this test paper by**  **Writing the answer in the box provided.**  **or**  **Shading in the bubble for the correct answer from the four choices provided.**  **or**  **Writing your answer on the lines provided.**  **Show any working out on the test paper.** | |
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| 2. | Year 8 conducts surveys on the four subjects, listed below. Which survey is an example of collecting categorical data;  The ages of 100 students.  The masses of 100 students.  The head diameter of 100 students.  The favourite sports team of 100 students. |
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| 4. | The numbers of DVDs owned by 15 friends are listed below.  16, 17, 23, 25, 28, 15, 35, 16, 32, 19, 29, 45, 8, 12, 25    Find the median number of DVDs. |
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| 8. | Erin and Steph compare the number of points they scored in 10 games of netball.  Erin 5, 7, 10, 9, 8, 8, 7, 12, 9, 7  Steph 2, 4, 3, 7, 13, 3, 4, 8, 10, 3  Which is true?  Erin has a greater mode, but Steph has a greater range.  Steph has a greater mode, but Erin has a greater range.  Erin has a greater mode and a greater range.  Steph has a greater mode and a greater range. |
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| 10. | The mean of Tatum’s times on six swims is 45 seconds. What time must she attain on the seventh swim to lower her mean time to 43 seconds? |
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|  | Questions 12 to 15 refer to the frequency table below which gives the scores by a soccer team in 24 games.   |  |  |  | | --- | --- | --- | | Score | Frequency | fx | | (x) | (f) |  | | 0 | 5 | 0 | | 1 | 7 | 7 | | 2 | 5 | 10 | | 3 | 4 | 12 | | 4 | 1 | 4 | | 5 | 2 | 10 | |  | Σ f = 24 | Σ fx =43 | |
| 12. | Complete the frequency table. (2 marks) |
| 13. | The mode of the scores is :  0 1 0 and 2 2 |
| 14. | The range of the scores is :  4 5 6 7 |
| 15. | The mean of the scores (correct to one decimal place) is: |

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|  | Questions 16 to 19 refer to the stem and leaf plot below.  The plot shows the number of minutes spent on study in a week by 28 students in a class.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 2 | 6 | 7 |  |  |  |  | | 3 | 0 | 7 | 7 | 7 |  |  | | 4 | 1 | 2 | 3 | 6 | 8 | 9 | | 5 | 1 | 2 | 5 | 5 |  |  | | 6 | 0 | 2 | 2 | 2 |  |  | | 7 | 4 | 6 |  |  |  |  | | 8 | 0 | 2 | 4 | 6 |  |  | | 9 | 2 | 5 |  |  |  |  |   The total number of minutes spent on study by all of the students is 1591 minutes. |
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| 20. | The mean number of calls is :  5.7 6.1 14.2 16.3 |
| 21. | The median number of calls is :  5 5.5 6 6.5 |
| 22. | What is the range of the number of calls.      Range = |
| 23. | Write down the mode(s) of the number of calls.    Mode(s) = |
| 24. | Describe any clusters in the data.  There are three clusters centred around 1, 5 and 10. |
| 25. | Describe any outliers in the data.  There is one outlier of 15. |

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|  | Questions 26 – 28 refer to the information below.  The results on a quiz for two classes are shown on the back to back stem and leaf plot.  Class A Stem Class B   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  | 0 | 8 |  |  |  |  | |  |  |  |  | 3 | 1 | 6 | 7 | 8 |  |  | |  |  |  | 5 | 4 | 2 | 4 | 6 | 7 | 8 | 9 | |  |  | 5 | 4 | 2 | 3 | 2 | 6 | 7 | 8 |  | |  | 3 | 3 | 2 | 0 | 4 | 4 | 4 | 6 |  |  | | 8 | 5 | 4 | 3 | 1 | 5 | 3 | 6 |  |  |  | |  | 9 | 7 | 5 | 2 | 6 | 7 |  |  |  |  | |  |  | 7 | 4 | 3 | 7 |  |  |  |  |  | |
| 26. | Which is true?  Class A has 3 more students.  Class A has 1 more student.  Both classes have the same number of students.  Class B has 3 more students. |
| 27. | Which is true?  Class A has a greater mode and a greater median.  Class B has a greater mode and a greater median..  Class A has a greater mode, but Class B has a greater median.  Class B has a greater mode, but Class A has a greater median.. |
| 28. | Which class had better results on the quiz? Give reasons for your answer which include statistical measures.  Class A has a distribution which is skewed toward the higher marks, while class B’s scores are skewed toward the lower end. Class A also has a significantly higher median score, and although its mode is lower, only 2 scores produce this measure, so its results are overall better than class B. |