**Year 8 STATISTICS TEST**

**QUESTION 1**

Calculate the mean, median, mode and range for the following set of data. Show ALL of your working out in the boxes below.

**23, 32, 16, 37, 15, 31, 25, 21**

|  |
| --- |
| Mean: |
| Median: |
| Mode: |
| Range: |

**QUESTION 2**

For the following three questions, you need to firstly state whether a mistake in the calculations has been made and secondly correct the mistake in the space in the box below.

|  |  |
| --- | --- |
| 1. **Find the median:**   **4, 12, 1, 7, 3, 4, 1**  **Median = 3.5** | Is there a mistake? **YES/NO**  **CORRECT THE MISTAKE IN THE ANSWER...** |
| 1. **Find the range:**   **104, 22, 97, 43, 31**  **Range = 75** | Is there a mistake? **YES/NO**  **CORRECT THE MISTAKE IN THE ANSWER...** |
| 1. **Find the mode:**   **7.2, 7.4, 7.1, 7.6, 7.4, 7.1, 7.7, 7.6, 7.1**  **Mode = 7.1 and 7.4**  **(bimodal)** | Is there a mistake? **YES/NO**  **CORRECT THE MISTAKE IN THE ANSWER...** |

*(6 marks)*

**QUESTION 2**

**Use only the numbered cards below to answer the following three questions.**

**4**

**6**

**3**

**7**

**4**

**5**

**1**

**9**

**Choose 3 numbers from the cards above which satisfy the following:**

1. **mode of 4 AND a range of 2**

***(3 marks)***

1. **no mode AND a range of 6 AND a mean of 6**

***(3 marks)***

**Now, choose 4 numbers from the cards above which satisfy the following:**

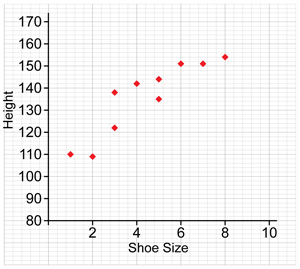
1. **median of 3.5 AND a range of 8 AND no mode**

***(4 marks)***

1. **mean of 4 AND a mode of 4**

***(4 marks)***

**QUESTION 3**

The following questions relate to the scattergraph below that shows shoe size versus height for students in Grade 4.

1. How many students in Grade 4 had their shoe size and height measured? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

*(1 mark)*

1. During the class discussion, one of the students explains to the teacher that she thinks that shoe size and height are not correlated. Do you agree with the student? **YES/NO**

|  |
| --- |
| **EXPLAIN WHY YOU AGREE OR WHY YOU DISAGREE** |

*(2 marks)*

1. Draw a line of best fit on the scattergraph above.

*(1 mark)*

1. Explain in the box below WHY you drew the line of best fit where you did on the scattergraph.

|  |
| --- |
| **I DREW THE LINE OF BEST FIT AS SHOWN ON THE SCATTERGRAPH BECAUSE...** |

*(1 mark)*

**QUESTION 4**

Twenty students were asked about their favourite ice cream flavour. These are their responses:

|  |
| --- |
| strawberry, vanilla, chocolate, vanilla, chocolate chip, chocolate, pecan, pecan, vanilla, vanilla, strawberry, chocolate chip, vanilla, chocolate, chocolate, vanilla, strawberry, chocolate chip, strawberry, vanilla |

Answer the following questions using the data above:

**(a.)** Find the mode **mode =**

**(b.)** Complete the following table and **then use this information** to ‘roughly’ construct a pie chart to display the data for favourite ice-cream flavour of the 20 students (see below).

|  |  |  |  |
| --- | --- | --- | --- |
| **Favourite flavour ice-cream** | **Tally** | **Frequency** | **Size of the slice in a pie chart (in degrees)** |
| strawberry |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

*(4 marks)*

**Pie chart representing the favourite ice-cream flavour of 20 students**

*(2 marks)*

**QUESTION 4 (CONTINUED)**

1. Another way of displaying the students’ favourite ice-cream flavours is to draw a bar chart. Draw the bar graph on the grid below. Make sure it is properly labelled.



*(4 marks)*

**QUESTION 5**

The times taken by 24 students to complete a mathematical puzzle are shown below in minutes:

|  |
| --- |
| **5, 22, 8, 13, 7, 9, 6, 8, 12, 10, 4, 9, 3,19, 18, 9, 14, 2, 5, 15, 21, 11, 5, 17** |

Construct a grouped frequency table for the data above using the following groups:

**0–4, 5–9, 10–14, 15–19 and 20–24**

|  |  |  |
| --- | --- | --- |
| Time taken (minutes) | Tally | Frequency |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

*(2 marks)*

(b.) Now construct a bar chart on the grid below using this information. Make sure to label your bar chart properly.



*(4 marks)*