**End of Unit Test** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Statistical Inquiry - HIGHER**

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Calculator allowed

**1.** This table shows information about the weights of 200 rabbits.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Weight, *w* (grams)** | **Frequency** | **Midpoint** |   |
|   | 60 < *w* < 70 | 101 | 65 |   |
|   | 70 < *w* < 80 |    64 | 75 |   |
|   | 80 < *w* < 90 |    25 | 85 |   |
|   | 90 < *w* < 100 |    10 | 95 |   |
|   |   | Total = 200 |   |   |

(a) Tick whether each statement is true or false.

|  |  |  |  |
| --- | --- | --- | --- |
|   |   | **True** | **False** |
|   | You can use the table to calculate the exact median. |  |  |
|   | You can use the table to work out the weight of the heaviest rabbit. |  |  |

**(1)**

(b) Calculate an estimate of the mean weight of the 200 rabbits.

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Answer ......................................................................grams

**(3)**

(d) Which **two** of these diagrams could you use to represent this grouped data? Circle your answers.

 stem and leaf frequency polygon scatter graph

 histogram cumulative frequency

 **(1)**

**(Total 5 marks)**

**2.** The table shows data about the times for men and women in a race.

|  |  |  |  |
| --- | --- | --- | --- |
|   |   | **Mean** | **Interquartile range** |
|   | **Men** | 34m 50s | 6m 30s |
|   | **Women** | 40m 10s | 4m 45s |

Use data from the table to make **two** comparisons between the performances of the men and women in the race.

Comparison 1

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Comparison 2

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 **(Total 2 marks)**

**3.** Here is some information about the number of books read by a group of people in 2014. One of the frequencies is missing.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Number of books** | **Frequency** | **Midpoint** |  |
|   | 0 – 4 | 16 | 2 |  |
|   | 5 – 9 |   | 7 |  |
|   | 10 – 14 | 20 | 12 |  |
|   | 15 – 19 | 10 | 17 |  |

Midpoints are used to work out an estimate for the mean number of books read. The answer is 8.5. Work out the missing frequency.

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Answer ............................................

**(Total 5 marks)**

**4.** Garage A sold 4960 vehicles. The garage takes a sample of customers, stratified by type of vehicle sold. Some information about the sample is shown.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   |   | **Car** | **People carrier** | **Van** | **Total** |
|   | **Number sold** | 2520 |   |   | 4960 |
|   | **Number in sample** | 126 | 44 |   |   |

Complete the table.

**(Total 3 marks)**

**5.** A scientist wants to estimate the number of fish in a disused canal. He catches a sample of 30 fish from the canal. He marks each fish with a dye and then puts them back in the canal. The next day the scientist catches 20 fish from the canal. He finds that 4 of them are marked with the dye.

(a) Estimate the total number of fish in the canal.

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 **(3)**

(b) Write down any assumptions you made.

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 **(2)
(Total 5 marks)**

**(Total for test = 20 marks)**