YEAR 9 ASSESSMENT HOMEWORK – CALCULATOR ALLOWED Higher

NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_TEACHER \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Rounding and Estimation | /10 | Manipulating Expressions | /10 | Averages | /10 | Standard Form | /10 |

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|  | **Rounding and Estimation** |  |
| **1.** | a) Write 54 982 correct to 1 significant figure.  ……………………………  b) Write 0.000 7821103 correct to 1 significant figure.  ……………………………  c) Write 34 068.0031 correct to 2 significant figures.  …………………………… | **(3)** |
| **2.** | Estimate the value of 603 x 19.1  11.94  Show your method.  ................................. | **(2)** |
| **3.** | a) Use your calculator to work out  Write down all the figures on your calculator  ...................................    b) Write your answer to part (a) correct to 2 decimal places.  ................................... | **(2)**  **(1)** |
| **4.** | A stop-watch records the time for the winner of a 100 metre race as 14.3 seconds, measured to the nearest one tenth of a second.  What is the range of possible times for the winner?  ................................................................. | **(2)** |
|  | TOTAL | **/10** |

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|  | **Manipulate Expressions** |  |
| **1.** | Simplify   1. = ……………… d) = ………………   b)  = ……………… e)  = ……………… | **(4)** |
| **2.** | Expand the following brackets  a) 5( 2*x* + 4 )    = ……………………………  b) ( *x*  - 3 )( *x* – 4 )  = …………………………… | **(2)** |
| **3.** | Factorise the following expressions  a) 6*x* + 14b) 10*x*2 + 15*xy*  = …………………………… = …………………………… | **(2)** |
| **4.** | Make t the subject of this formula v = u + at  t = …………………………… | **(2)** |
|  | TOTAL | **/10** |

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|  | **Averages** |  |
| **1.** | Here are the temperatures recorded in November last year.   |  |  |  | | --- | --- | --- | | **Temperature** | **Frequency** |  | | -2 | 2 |  | | -1 | 2 |  | | 0 | 1 |  | | 1 | 4 |  | | 2 | 5 |  | | 3 | 6 |  | |  |  |  |   Find the modal temperature in November. ………………………  Complete the table and use it to find the mean temperature for November.  ……………………… | **(1)**  **(3)** |
| **2.** | A bag contains 29 potatoes. Here are the distributions of the weights:   |  |  |  |  | | --- | --- | --- | --- | | **Weight (w) g** | **Frequency** |  |  | | 0 < w ≤ 100 | 2 |  |  | | 100 < w ≤ 200 | 14 |  |  | | 200 < w ≤ 350 | 9 |  |  | | 350 < w ≤ 400 | 3 |  |  | | 400 < w ≤ 600 | 1 |  |  | | **Total** |  | **Total** |  |   a) Write down the class interval containing the median.  ……………………  b) Work out an estimate for the mean weight. Give your answer to 1d .p..  ……………………  c) Work out the minimum possible range for the weight.  …………………… | **(1)**  **(4)**  **(1)** |
|  | TOTAL | **/10** |

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|  | **Indices and Standard Form** |  |
| **1.** | Rewrite each expression using a single power  a) 2³ x 22 = ………………    c) 3-2 x 34 = ………………    d) 56 ÷ 5-3 = ………………  e) (42)5 = ……………… | **(4)** |
| **2.** | Write the following in standard form  a) 638 000 ...........................................  b) 0.7 × 103 ........................................... | **(2)** |
| **3.** | Write the following as ordinary numbers  a) 1.58 × 104 ...........................................  b) 5.03 × 10-2 ........................................... | **(2)** |
| **4.** | *c* = *a* = 3.7 × 104  *b* = 5 × 109  Find the value of *c*.  Give your answer in standard form correct to 3 significant figures.  ........................................... | **(2)** |
|  | TOTAL | **/10** |