**Year 8 Enhanced Standard: Assessment 1 Revision Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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|  | Topic 1: Rounding and Estimation | Mark |
| 1. | Use approximations to estimate the value of $\frac{37 × 304}{58}$ Answer ……………………………… | (2) |
| 2. | A pop concert has a crowd of 2000 people rounded to 1 significant figure. A rock concert has a crowd of 2000 people rounded to 2 significant figures. Work out the largest possible difference between the exact numbers of the two crowds.………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………Answer ………………………………  | (3) |
| 3. | Use your calculator to work out   $\frac{3.21+4.89}{5.62-1.89}$   as a decimal.(a)     Write down your full calculator display.Answer …………………………………………………………(b)     Write your answer to 1 decimal place.Answer ………………………………  | (1)(1) |
| 4. | Bags of nails weigh 200 grams each. Boxes of screws weigh 140 grams each.Both measurements are given to the nearest 10 grams.Show that 4 bags of nails **could** weigh the same as 6 boxes of screws.……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… | (3) |

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|  | Topic 2: Manipulating Expressions | Mark |
| 1. | Expand and simplify      6(*x* – 3) – 4(*x* – 5) ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………Answer ………………………………  | (2) |
| 2. | (a)     Multiply out     5(3*x* + 7) Answer ………………………………(b)     Make *w* the subject of the formula     *y* = *w* + 3 Answer ………………………………(c)     Factorise fully     4*a*2 + 6*a* Answer ………………………………  | (1)(1)(1) |
| 3. | Write as a single power of 9 $\frac{9^{5}×9^{7}}{9^{4}}$  Answer ………………………………  | (2) |
| 4. | Rearrange        2(*a* + *c*) = 5(*a* − *b*)        to make *c* the subject.………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………Answer ………………………………  | (3) |

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|  | Topic 3: Averages | Mark |
| 1. | Here are seven numbers. **13         6         12         7         6         4         8**(a)     Work out the range of the seven numbers. Circle your answer. 5                      6                      7                      8                      9(b)     What is the mode of the seven numbers? Circle your answer.5                      6                      7                      8                      9 | (1)(1) |
| 2. | The table shows information about the marks of 30 students in a test.

|  |  |
| --- | --- |
| **Mark** | **Frequency** |
| 14 | 2 |
| 15 | 10 |
| 16 | 2 |
| 17 | 3 |
| 18 | 13 |
| Total | 30 |

 Students who scored less than the mean mark have to retake the test.How many students have to retake the test?You **must** show your working.………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………Answer ………………………………  | (3) |
| 3. | Here is some information about the number of books read by a group of people in 2014One of the frequencies is missing.

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

 Mid-points are used to work out an estimate for the mean number of books read.The estimate for the mean number of books read is 8.5 Work out the missing frequency.………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………Answer ………………………………  | (5) |

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|  | Topic 4: Standard Form | Mark |
| 1. | Work out   $\frac{7.2×10^{-8}}{1.6×10^{-5}}$       Give your answer as an ordinary number. Answer ……………………………… | (2) |
| 2. | (a)    The table shows the masses of planets in the form *a* × 1024 kg

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| --- | --- | --- |
|  | **Planet** | **Mass (kg)** |
|   | Mercury | 0.330 $×$ 1024 |
|   | Venus | 4.87 $×$ 1024 |
|   | Mars | 0.642 $×$ 1024 |
|   | Jupiter | 1900 $×$ 1024 |
|   | Saturn | 568 $×$ 1024 |

 Write the mass of Jupiter in kilograms. Give your answer in standard form.Answer ……………………………… (b)     The mass of the Earth is 5.97 × 1024 kg The volume of the Earth is 1.08 × 1021 m3https://app.doublestruck.eu/content/AG_MA/HTML/Q/Q14J1H06_files/img01.png Calculate the density of the Earth. Give your answer to an appropriate degree of accuracy.………………………………………………………………………………………………………………………………………………………………………………Answer ……………………………… kg/m3 | (1)(2) |
| 3. | $R=\frac{x^{2}}{y}$ *x* = 3.6 $×$ 10⁵ *y* = 7.5 $×$ 10⁴Work out the value of *R*. Give your answer in standard form to an appropriate degree of accuracy. Answer ………………………………  | (2) |
| 4. | Here is a list of numbers.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 000 000 | 4.6 $×$ 104 | 63 000 | 5 $×$ 103 | 1.7 $×$ 105 |

Work out the range.Write your answer in standard form.………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………Answer ……………………………… | (3) |