**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  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      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    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 2014  One 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  Give your answer as an ordinary number.  Answer ……………………………… | (2) |
| 2. | (a)    The table shows the masses of planets in the form *a* × 1024 kg     |  |  |  | | --- | --- | --- | |  | **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 m3  https://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. | *x* = 3.6 10⁵ *y* = 7.5 10⁴  Work 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) |