**Year 10 Higher Standard: Assessment 1 Revision**

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| **Topic 1** | **/15** | **Topic 2** | **/15** | **Topic 3** | **/15** | **Topic 4** | **/20** |

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|  | **Topic 1: Recurring decimals and bounds** | **Mark** |
| **1.** | By doing a short division, write  as a recurring decimal. | **1** |
| **2.** | Convert into a fraction.  ………… | **2** |
| **3.** | Convert   to a fraction in its lowest terms.  ………… | **2** |
| **4.** | The length of a fence is 137 metres, correct to the nearest metre.  Write down as inequality to illustrate this.  …………………………………… | **2** |
| **5.** | a) The length of a side of a regular hexagon is 3.6 cm correct to the nearest  millimetre.  Calculate the upper bound for the perimeter of the regular hexagon.  ……………………………………  b) Correct to 1 significant figure, the area of a rectangle is 80 cm2  Correct to 2 significant figures, the length of the rectangle is 12 cm.  Calculate the upper bound for the perimeter of the rectangle.  Show your working clearly.  …………………………………… | **1**  **3** |
| **6.** | a = 3 correct to 1 significant figure  b = 8.37 correct to 3 significant figures  c = 5.3 correct to 1 decimal place  Calculate the upper bound of *a*(*b* – *c*)  Show your working clearly.  …………………………………… | **4** |

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|  | **Topic 2: Quadratics** | **Mark** |
| **1.** | Factorise the following:  a) *x*2 + 5*x* + 6 b) *x*2 – 7*x* – 8  ………………………………… ……………………………… | **4** |
| **2.** | Solve  a) *x*2 + 10*x* + 24 = 0 b) *x*2 + 15*x* = 16  ………………………………… ……………………………… | **6** |
| **3.** | a) Solve *x*2 – 4*x* – 12 = 0  …………………………………    b) Hence sketch the graph of *y = x*2 – 4*x* – 12  showing the intercepts on the *x* and *y* axes. | **3**  **2** |

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|  | **Topic 3: Data display** | **Mark** |
| **1.** | |  |  |  | | --- | --- | --- | | Show this data on a box plot. | Maximum | 58 | |  | Upper quartile | 50 | |  | Median | 38 | |  | Interquartile range | 26 | |  | Range | 52 |   0 10 20 30 40 50 60 | **3** |
| **2.** | The box plot shows the number of behaviour points for each of the pupils in a form.  18 pupils had less than 6 behaviour points. How many pupils are in in the form altogether?  0 2 4 6 8 10 12 14 16  …………………… | **1** |
| **3.** | Here is some information about the miles per gallon of 60 cars.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Miles per gallon, *x*** | **Frequency** |  | **Miles per gallon, *x*** | **Cumulative Frequency** | | 40 < *x* ≤ 50 | 6 |  | 0 < *x* ≤ 50 |  | | 50 < *x* ≤ 60 | 16 |  | 0 < *x* ≤ 60 |  | | 60 < *x* ≤ 70 | 28 |  | 0 < *x* ≤ 70 |  | | 70 < *x* ≤ 80 | 10 |  | 0 < *x* ≤ 80 |  |   a)  Complete the cumulative frequency table  b) Draw a cumulative frequency graph.    c) Use the graph to work out the interquartile range.  …………………… miles per gallon | **1**  **2**  **2** |
| **3.** | Compare the heights of the girls and the boys.  Boys  cm    Girls    ………………………………………………………………………………………………………………………………………………………………  ………………………………………………………………………………………………………………………………………………………………  ………………………………………………………………………………………………………………………………………………………………  ……………………………………………………………………………………………………………………………………………………………… | **2** |
| **5.** | The table and histogram show some information about the cholesterol level in the blood of 100 hospital patients.   |  |  | | --- | --- | | **Cholesterol level, *c*** | **Frequency** | | 0 < *c* ≤ 2 | 8 | | 2 < *c* ≤ 3 | 13 | | 3 < *c* ≤ 4 |  | | 4 < *c* ≤ 5 | 19 | | 5 < *c* ≤ 7 |  | | 7 < *c* ≤ 10 | 15 |     a)     Use the table to complete the histogram.  b)     Use the histogram to complete the table. | **2**  **2** |

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|  | **Topic 4: Indices and surds NON-CALCULATOR** | **Mark** |
| **1.** | Calculate the following:  a)  = ………… b)  = ………… c)  = ………… | **3** |
| **2.** | Work out the value of 125  ………… | **2** |
| **3.** | Write down the value of  (i)  *p* ………… (ii)  *q* ………… (iii)  *r* ………… | **3** |
| **5.** | Calculate .  Give your answer in standard form.  ……………………………… | **2** |
| **6.** | Calculate .  Give your answer in standard form.  ……………………………… | **2** |
| **7.** | a) Express in surd form.  …………  b) Rationalise the denominator and simplify fully  ………… | **2**  **2** |
| **8.** | a)  Expand and simplify  ………………………………  b) Rationalise the denominator and simplify fully  ……………………………… | **2**  **2** |

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|  | **Topic 4: Indices and surds NON-CALCULATOR** | **Mark** |
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| **2.** | Work out the value of 125  ………… | **2** |
| **3.** | Write down the value of  (i)  *p* ………… (ii)  *q* ………… (iii)  *r* ………… | **3** |
| **5.** | Calculate .  Give your answer in standard form.  ……………………………… | **2** |
| **6.** | Calculate .  Give your answer in standard form.  ……………………………… | **2** |
| **7.** | a) Express in surd form.  …………  b) Rationalise the denominator and simplify fully  ………… | **2**  **2** |
| **8.** | a)  Expand and simplify  ………………………………  b) Rationalise the denominator and simplify fully  ……………………………… | **2**  **2** |