**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 $\frac{3}{11}$  as a recurring decimal. | **1** |
| **2.** | Convert $0.\dot{1}\dot{0}$ into a fraction.………… | **2** |
| **3.** | Convert  $0.\dot{70}\dot{2}$ 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 figureb = 8.37 correct to 3 significant figuresc = 5.3 correct to 1 decimal placeCalculate 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.** | Solvea) *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.** |

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| 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.

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| **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 tableb) 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.

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| **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 $1.2×10^{3} × 3×10^{4}$.Give your answer in standard form.……………………………… | **2** |
| **6.** | Calculate $1.8×10^{7} ÷ 2×10^{3}$.Give your answer in standard form.……………………………… | **2** |
| **7.** | a) Express $\sqrt{48}$ 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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| **5.** | Calculate $1.2×10^{3} × 3×10^{4}$.Give your answer in standard form.……………………………… | **2** |
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| **8.** | a)  Expand and simplify  ………………………………b) Rationalise the denominator and simplify fully  ……………………………… | **2****2** |