**Year 10 Revision HW NON-CALCULATOR Core Standard**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Teacher \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number 1 | /10 | Algebra | /15 | Averages | /15 | Properties of numbers | /15 |

|  |  |  |
| --- | --- | --- |
|  | **Rounding Numbers** |  |
| **1.****S** | Write 8.4576 correct to 3 decimal places. ……………………… | **(1)** |
| **2.****S** | Jamaica's Usain Bolt ran 100m in a time of 9.653 seconds.Round this correct to 2 decimal places.  ……………………… sec | **(1)** |
| **3.****S** | The maximum crowd at the Wembley stadium football ground is 84 254.Write this correct to 3 significant figures.  ………………………  | **(1)** |
| **4.****S** | The mass of a grain of sand is 0.000867 kg.Write this correct to 1 significant figure.  ……………………… kg | **(1)** |
| **5.****S** | Estimate the value of: $\frac{63 ×511}{195}$  ……………………… | **(2)** |
| **7.****F** | A ticket for a seat at a school play costs £3.95There are 52 rows of seats. There are 28 seats in each row.The school will sell all the tickets. Work out an estimate for the total money the school will get. ……………………… | **(2)** |
| **10.****S** | A packet of crisps has a mass of 32 grams, correct to the nearest gram.Write down the **least** possible mass of the crisps. ………………… grams | **(1)** |
| **11.****S** | The time to run a race was measured as 24.6 seconds to 1 decimal place. Write the error bound for the time as an inequality.………………………………… | **(1)** |
|  | **TOTAL** | **/10** |
|  |  |  |
|  | **Basic Algebra** |  |
| **1.****S** |

|  |  |  |  |
| --- | --- | --- | --- |
| a = 3 | b = -3 | c = 5 | d = 10 |

b) Find the value of:a) 6a + d = ……………………… b) 3d + 2b = ………………………c) 5a2 = ……………………… b) ½(5a-b) = ……………………… | **(4)** |
| **6.****S** | Expand the following:a) 4(7*a* – 3)  ………………………b) 6a(a + 5) ……………………… | **(1)****(1)** |
| **7.****F** | Expand and simplify 7(3p + 5) + 4(6p – 5)  ……………………… | **(2)** |
| **9.****F** | Expand and simplify (p + 9)(p – 11) ……………………… | **(2)** |
| **10.****S** | Simplify the following:a) $a^{7}×a^{4}$ ……………………… b) $\frac{d^{9}×d}{d^{5}}$ ………………………c) (2e5)3  ………………………  | **(3)** |
| **12.****F** | a) Factorise 18a – 21 ………………………b) Factorise *x*2 + 13 *x* + 40 ……………………… | **(1)****(1)** |
|  | **TOTAL** | **/15** |
|  |  |  |
|  | **Averages** |  |
| **1.****S** | Farah recorded the minimum temperature, in °C, on each of seven days in January.Here are her results.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Day | Mon | Tue | Wed | Thur | Fri | Sat | Sun |
| Temp (°C) | -3 | -1 | 4 | 1 | -2 | 6 | 9 |

Work out the mean of the temperatures Farah recorded. ……………………… °C | **(2)** |
| **2.****F** | Ed has 4 cards. There is a number on each card.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **7** |  | **13** |  | **9** |  | ……… |

The mean of the 4 numbers on Ed's cards is 8.Work out the number on the 4th card. | **(2)** |
| **3.****F** | Find the mean value of the following cards:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **5a + 6** |  | **4a**  |  | **3a - 2** |  | **8a + 12** |  ………………………… |

 | **(2)** |
| **4.****F** | Rosie recorded the age of some of her friends

|  |  |
| --- | --- |
| **Age** | **Frequency** |
| 5 | 6 |
| 6 | 8 |
| 7 | 10 |
| 8 | 8 |

Rosie said that the modal age is 8. Rosie is wrong. Explain why.……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… | **(2)** |
| **5.****F** | The age of 10 students is recorded in the table below.

|  |  |  |
| --- | --- | --- |
| Age | Frequency |  |
| 8 | 2 |  |
| 9 | 4 |  |
| 10 | 3 |  |
| 11 | 1 |  |
| Total |  |  |

a) Calculate out the mean age. ……………………b) Calculate out range. …………………… | **(2)****(1)** |
| **6.****F** | Vanessa asked 10 people how long it took them to get to school:

|  |  |  |  |
| --- | --- | --- | --- |
| **Length of call (*t* minutes)** | **Frequency** |  |  |
| 0 < *t* ≤ 10 | 5 |  |  |
| 10 < *t* ≤ 20 | 3 |  |  |
| 20 < *t* ≤ 30 | 1 |  |  |
| 30 < *t* ≤ 40 | 1 |  |  |
| Total | 10 |  |  |

 a) Work out an estimate for the mean length of the calls. ……………………… b) Write down the modal class interval. …………………… | **(3)****(1)** |
|  | **TOTAL** | **/15** |
|  |  |  |
|  | **Number 2** |  |
| **1.****S** | Find the value of a) 43 ……………………… b) 24 ………………… c) (−10)3 ……………………d) 60 ……………………… e) 11-1 ………………… f) 3-2 …………………… | **(6)** |
| **4.****S** | Convert the following into standard form:a) 5 61 0000 …………………………… b) 0.000 037 …………………………c) 13.4 x 104 …………………………… | **(3)** |
| **5.****S** | Re-write the following using normal notation:a) 7.8 x 10-5 ………………………b) 6.21 x 103 ……………………… | **(2)** |
| **6.****F** | Calculate the following (Give your answer in standard form). a) 6.1 x 106 + 2.6 x 105 b) (8 x 103) x (3 x 107)  …………………………………… …………………………………… | **(2)****(2)** |
|  | **TOTAL** | **/15** |