YEAR 8 Assessment Homework – CALCULATOR NOT ALLOWED Higher

NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TEACHER \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Negative Numbers | /10 | Algebraic Manipulation | /10 | Averages | /10 | Number Properties | /10 |

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| --- | --- | --- |
|  | **Negative Numbers** |  |
| **1.** | Find the missing numbers in these calculations. a) - 9 + - 3 = ………… c) - 14 + -3 - - 3 = …………  | **(2)** |
| **2.** | Complete this addition table

|  |  |  |  |
| --- | --- | --- | --- |
| **+** | **-5** | **3** | **6** |
| **2** | -3 |  | 8 |
| **-4** |  |   |  |
|  | -11 |  -3 | 0 |

  | **(5)** |
| **3.** | Find the missing numbers in these calculations:a) –2 x –4 = ……… b) –4 x ……… x –5 = 80  c) –36 ÷ ……… = 3  | **(3)** |
|  | **TOTAL** | **/10** |

|  |  |  |
| --- | --- | --- |
|  | **Algebraic Manipulation** |  |
| **1.** | Here are some algebraic expressions:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **A** |  | **B** |  | **C** |  | **D** |
| 2n + 6 |  | 3n – 11 |  | 3(n + 2) |  | n² + 6 |

a) What is the value of card A when *n* = 4? ………………………… b) What is the value of card B when *n* = 4? …………………………c) What is the value of card C when *n* = 4? …………………………d) What is the value of card D when *n* = 4? ………………………… | **(4)** |
| **2.** | Simplify: a) 13*a* + 7*b* – 3*a*  – *b* …………………………b) 3a x 4b …………………………c) 3c² x 6c …………………………d) 4(3a – b + 6) ………………………… | **(4)** |
| **3.** | You can work out the cost of an advert in a newspaper by using this formula:a) An advert has **20 words**. Work out the cost of the advert.………………………………………………………b) The cost of an advert is **£195**. How many words are in the advert?  ……………………………………………………… | **(1)****(1)** |
|  | **TOTAL** | **/10** |

|  |  |  |
| --- | --- | --- |
|  | **Averages** |  |
| **1.****2.** | Here are some numbers:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **12** |  | **6** |  | **7** |  | **6** |  | **3** |  | **8** |

Find:a)The mode. ……………………… b) The median. ………………………c)The mean. ………………………d) An extra card is added. The mean value of the numbers remains the same. What number is on the new card? ………………………Josie played **two** games in a competition.Her **mean** score was **6** points.Her **range** was **8** points.What points did Josie score in her two games? ………… and …………… | **(1)****(2)****(2)****(1)****(1)** |
| **5.** | This table shows the shoe sizes of 20 men:

|  |  |  |
| --- | --- | --- |
| **Shoe size** | **Number of men** |  |
| 7 | 2 |  |
| 8 | 4 |  |
| 9 | 2 |  |
| 10 | 6 |  |
| 11 | 4 |  |
| 12 | 2 |  |
| **Total** | 20 |  |

a) What is the modal shoe size? ……………b) What is the mean shoe size? …………………………………………………… | **(1)****(2)** |
|  | **TOTAL** | **/10** |

|  |  |  |
| --- | --- | --- |
|  | **Number Properties** |  |
| **1.** | Write 40 as a product of its prime factors. 40 = …………………………………… | **(2)** |
| **2.** | a) Express the number 24 as a **product of its prime factors**. 24 = ……………………………………b) Find the **highest common factor** of 24 and 40.HCF = ……………………………………c) Find the **lowest common multiple** of 24 and 40LCM = …………………………………… | **(2)****(1)****(1)** |
| **3.** | Work out the followinga) 24 – 16 ÷ 8 ……………… b) 42 + 3 × 6 ………………  | **(2)** |
| **4.** | Add brackets ( ) to make these statements correct.11 − 3 × 4 + 2 = 486 + 2 × 3 – 2 = 8 | **(1)****(1)** |
|  | **TOTAL** | **/10** |