YEAR 8 Assessment Homework – CALCULATOR NOT ALLOWED Core

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

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

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|  | **Negative Numbers** |  |
| **1.** | Write these integers in order of size with the **smallest first**. 13, –4, –18, 23, –13, 5 ……… ……… ……… ……… ……… ……… | **(1)** |
| **2.** | Calculate the following: a) 2 – 7 = ………    b) -6 – 8 = ………    c) -2 + 9 = ………  d) 5 – 9 + 2 = ………    e) -7 + 3 – 5 = ………    f) -9 – 3 + 4 = ……… | **(6)** |
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| **3.** | Find the missing numbers in these calculations    a) 8 - -11 = …………  b) - 3 - -5 = …………  c) -12 + -5 - - 7 = ………… | **(3)** |
|  | **TOTAL** | **/10** |

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|  | **Algebraic Manipulation** |  |
| **1.** | Simplify the following  a) *d + d + d* ……………………  b) *d + e + e + d + d – d - e* ……………………  c) 6*a* + 2*c* + 4*a* + 3*c* ……………………  d) 13*a* + 6*b* – 3*a*  – *b* ……………………  e) 4a x 3b …………………… | **(5)** |
| **2.** | The perimeter of this shape is 3a + 2b.  a  a  a  2b  2b  **p = 3a + 4b**  Write an expression for the perimeters  of each of these shapes.  2g  3g  3g  5e  5e  2f  7f  …………………………………………………… …………………………………………………… | **(2)** |
| **3.** | The equation shows how much you pay to hire a car.  **T = N x 30**  N = number of days hired for  T = total amount paid in £  a) Leena hires the car for 4 days.  How much must she pay? …………………………  b) Tom pays £270 to hire the car.  For how many days did he hire the car? ………………………… | **(1)**  **(2)** |
|  | **TOTAL** | **/10** |

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|  | **Averages** |  |
| **1.** | Here are some numbers:   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** |  | **3** |  | **2** |  | **8** |  | **2** |  | **2** |   Find:  a)The mode. ………………………  b) The median. ………………………  c)The mean. ………………………  d) The range. ………………………  e) An extra card is added. The mean value of the numbers remains the same.  What number is on the new card?  ……………………… | **(1)**  **(1)**  **(2)**  **(1)**  **(1)** |
| **2.** | Write two numbers which have a mean of 7 and a range of 6?  ............................. and ............................. | **(1)** |
| **3.** | This table shows the shoe sizes of 20 men:   |  |  |  | | --- | --- | --- | | **Shoe size** | **Number of men** | **Subtotal** | | 7 | 3 | 7 x 3 = 14 | | 8 | 4 | 8 x …. = ……… | | 9 | 7 |  | | 10 | 7 |  | | 11 | 2 |  | | 12 | 1 |  | | **Total** | 20 |  |   a) What is the modal shoe size? ………………  b) What is the mean shoe size?  …………………………………… | **(1)**  **(2)** |
|  | **TOTAL** | **/10** |

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|  | **Number Properties** |  |
| **1.** | Write down all the **prime** numbers between 15 and 25.  …………………………………… | **(1)** |
| **2.** | a) Write 40 as a product of its **prime factors**.  40 = …………………………………… | **(2)** |
| **3.** | b) Express the number 24 as a **product of prime factors**.  24 = ……………………………………  b) Find the **highest common factor** of 24 and 40.  HCF = ……………………………………  c) Find the **lowest common multiple** of 24 and 40  LCM = …………………………………… | **(2)**  **(1)**  **(1)** |
| **4.** | Work out the following  a) 6 + 16 ÷ 4 b)   3 + 8 × 4  ……………… ………………  d) 3 × (7 – 4)  ……………… | **(3)** |
|  | TOTAL | **(10)** |