|  |  |  |  |
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| Year 7 | | *Introductory Algebra* | Non Calculator  Section |
| **Skills and Knowledge Assessed:**   * Introduce the concept of variables as a way of representing numbers using letters (ACMNA175) * Extend and apply the laws and properties of arithmetic to algebraic terms and expressions (ACMNA177) * Simplify algebraic expressions involving the four operations (ACMNA192) | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Answer all questions in the spaces provided on this test paper by:  *Writing the answer in the box provided.*  or  *Shading in the bubble for the correct answer from the four choices provided.*  Show any working out on the test paper.Calculators are **not** allowed. | | | |
|  |  | | |
|  |  | | |
|  | Ms Gausden asks her class to write an expression which is “*Four times the square of m*”  Which of these algebraic expressions could represent this? | | |
|  | Simplify | | |
|  | Simplify | | |
|  | 1 2 6 37 | | |
|  |  | | |
|  | Which of these does **not** simplify to | | |
|  | Simplify | | |
|  |  | | |
|  | Simplify | | |
|  | Simplify | | |
|  |  | | |
|  |  | | |
|  | Simplify  . | | |
|  | If *a* is an integer between 0 and 4 inclusive, what is the smallest value of  ? | | |
|  |  | | |
|  | A cup holds *x* ml of water and a mug holds  ml of water.  How much water does 3 cups and 2 mugs hold? | | |
|  | A rectangular sheet of plastic is *l* cm long and *w* cm wide. What is the combined area of 5 of these sheets? | | |
|  | Using *n* for the number, write an expression in algebraic symbols for the following.  “*Take any number, double it and add five, then divide the result by 10.”* | | |

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| Year 7 | | *Introductory Algebra* | Calculator Allowed  Short Answer  Section |
|  | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Answer all questions in the spaces provided on this test paper by:  *Writing the answer in the box provided.*  or  *Shading in the bubble for the correct answer from the four choices provided.*  Show any working out on this test paper. Calculators are allowed. | | | |
|  | Simplify | | |
|  | Simplify | | |
|  | If  what is the value of | | |
|  |  | | |
|  | Write  in index form. | | |
|  | If  what is the value of | | |
|  | Write an albegraic expression for: “*Multiply the sum of x and y by 4.”* | | |
|  |  | | |
|  |  | | |
|  | Which of the following does **not** simplify to give | | |
|  | 9 22.5 30 90 | | |
|  | Simplify | | |
|  | When  ,  and  which expression has a value of | | |
|  | Simplify | | |
|  | 4 8 | | |
|  |  | | |
|  | Which expression is not equal to | | |
|  |  | | |
|  | Which of these means the same as | | |
|  | Which of these is always true, regardless of the values of *a*, *b* and *c*? | | |

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| Year 7 | | *Introductory Algebra* | Non Calculator  Section |
| ANSWERS | | | |
| No. | WORKING | | ANSWER |
|  |  | | 2nd answer |
|  |  | | 3rd answer |
|  |  | | 1st answer |
|  |  | |  |
|  |  | |  |
|  |  | | 2nd answer |
|  |  | | 4th answer |
|  |  | | 3rd answer |
|  |  | |  |
|  |  | | 4th answer |
|  |  | |  |
|  |  | | 2nd answer |
|  |  | | 4 |
|  |  | | 3rd answer |
|  |  | |  |
|  | |  |  | | --- | --- | |  |  | | 0 |  | | 1 |  | | 2 |  | | 3 |  | | 4 |  |   The smallest value is 1 | | 1 |
|  |  | | 4th answer |
|  |  | | 3rd answer |
|  |  | |  |
|  | “*Take any number (n)*  *Double it gives 2n*  *Add five, gives 2n + 5*  *Divide the result by 10 gives* | |  |

|  |  |  |  |  |
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| Year 7 | | *Introductory Algebra* | Calculator Allowed  Short Answer  Section | |
| ANSWERS | | | | |
| No. | WORKING | | | ANSWER |
|  |  | | |  |
|  |  | | |  |
|  |  | | | 47 |
|  |  | | | 3rd answer |
|  |  | | |  |
|  |  | | | 2nd answer |
|  | “*Multiply the sum of x and y by 4.”*  *The sum of x and y = x + y*  *Multiply this by 4 =* | | |  |
|  |  | | | 4th answer |
|  |  | | | 5*ed* or 5*de* |
|  |  | | | 3rd answer |
|  |  | | | 4th answer |
|  |  | | | 1st answer |
|  | ,  and | | | 2nd answer |
|  |  | | |  |
|  |  | | | 4th answer |
|  |  | | |  |
|  |  | | | 1st answer |
|  |  | | |  |
|  |  | | | 1st answer |
|  |  | | | 3rd answer |