|  |  |  |  |
| --- | --- | --- | --- |
| 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.* | | | |
|  |  | | |
|  |  | | |
|  | Richard says to Amber: *“I doubled x and added the square of y.”*  Which of these algebraic expressions could represent this? | | |
|  | Simplify | | |
|  | Simplify | | |
|  |  | | |
|  | Which of these is equal to | | |
|  | Which of these is the same as  ? | | |
|  | Simplify: . | | |
|  | Which of the following is **not** equivalent to  ? | | |
|  | Simplify . | | |
|  | Express  in simplest form. | | |
|  | Which of these is equivalent to  ? | | |
|  |  | | |
|  | Simplify | | |
|  | When   and , calculate the value of | | |
|  | Which of the following is not a possible answer when a positive integer is substituted into the expression  6 9 20 30 | | |
|  | Which expression is equivalent to | | |
|  | A bottle of water has a mass of *m* grams. Which expression would give the mass of *N* bottles of water (in kilograms)? | | |
|  | Write an algebraic expression for : | | |

|  |  |  |  |
| --- | --- | --- | --- |
| 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 the test paper. Calculators are allowed.* | | | |
|  | Simplify the expression | | |
|  | Simplify the expression | | |
|  | When | | |
|  |  | | |
|  | Write  in simplest form. | | |
|  | Justine said *“Take the product of m and n from the square of p.”*  Write this using algebraic notation. | | |
|  |  | | |
|  | Which of these is the same as | | |
|  | Simplify | | |
|  | Which of these is not the same as | | |
|  | When | | |
|  | Which of the following is equivalent to  ? | | |
|  | Which of these expressions has a value of  ? | | |
|  | Simplify | | |
|  | Simplify | | |
|  |  | | |
|  | When and  what is the value of  ? | | |
|  | What is the value of  when  and .  3 13 39 45 | | |
|  | Which expression is **not** equivalent to | | |
|  | Write an algebraic expression which means the same as the following.  *Half of the sum of s and the product of d and f.* | | |

Introductory Algebra

ANSWERS

|  |  |  |
| --- | --- | --- |
| Non Calculator Section ( 1 mark each) | | |
| Q no |  | Answer |
|  |  | 2nd Answer |
|  |  | 4th Answer |
|  | *I doubled x and added the square of y becomes* | 1st Answer |
|  |  | 11*a* |
|  |  |  |
|  |  | 76 |
|  |  | 3rd Answer |
|  |  | 2nd Answer |
|  |  |  |
|  |  | 4th Answer |
|  |  | 3*m* |
|  |  |  |
|  |  |  |
|  |  | -2 |
|  |  | 4*m* |
|  |  | 103 |
|  |  | 2nd Answer |
|  |  | 4th Answer |
|  |  | 1st Answer |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| Calculator Allowed Section ( 1 mark each) | | |
| Q No |  | Answer |
|  |  |  |
|  |  |  |
|  |  | 3rd Answer |
|  |  | 4th Answer |
|  |  |  |
|  | *“Take the product of m and n from the square of p.”* |  |
|  |  | 1st Answer |
|  |  | 1st Answer |
|  |  |  |
|  |  | 3rd Answer |
|  |  | 20 |
|  |  | 4th Answer |
|  |  | 3rd Answer |
|  |  |  |
|  |  |  |
|  |  | 2nd Answer |
|  |  |  |
|  |  | 1st Answer |
|  |  | 4th Answer |
|  | Half of the sum of s and the product of d and f. |  |