|  |  |  |  |
| --- | --- | --- | --- |
| Year  8 | | *Further Algebraic Techniques* | Non Calculator  Section |
| **Skills and Knowledge Assessed:** | | | 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.* | | | |
|  | The expression  when simplified completely is: | | |
|  | Simplify | | |
|  | 1 2 6 12 | | |
|  | Which is **not** a factor of | | |
|  | Expand | | |
|  | Expand | | |
|  | Expand | | |
|  | The values of  when  respectively are:  -36 and 28 -28 and 36 28 and 36 60 and 68 | | |
|  | Expand | | |
|  | Expand | | |
|  | Expand | | |
|  | Which is a correct factorisation of | | |
|  | Factorise | | |
|  | Factorise | | |
|  | Expand and simplify | | |
|  | Expand and simplify | | |
|  | Factorise . | | |
|  | Factorise | | |
|  | Factorise | | |
|  | Complete the table of values below.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 0 | 1 | 5 | 10 | |  |  |  |  |  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Year  8 | | *Further Algebraic Techniques* | Calculator Allowed  Short Answer  Section |
| **Skills and Knowledge Assessed:**   * Create algebraic expressions and evaluate them by substituting a given value for each variable (ACMNA176) * Extend and apply the distributive law to the expansion of algebraic expressions (ACMNA190) * Factorise algebraic expressions by identifying numerical factors (ACMNA191) * Factorise algebraic expressions by identifying algebraic factors. * 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 allowed.* | | | |
|  |  | | |
|  |  | | |
|  | 2 5 15 50 | | |
|  | Write down two factors which give a result of | | |
|  | Expand | | |
|  | Expand | | |
|  | Expand | | |
|  | Complete the table below for the formula     |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | -2 | 1 | 6 | 20 | |  |  |  |  |  | | | |
|  | Expand | | |
|  | Expand | | |
|  | Expand | | |
|  | Which is a correct factorisation of | | |
|  | Factorise completely | | |
|  | Factorise completely | | |
|  | Expand and simplify | | |
|  | Expand and simplify | | |
|  | Factorise: | | |
|  | Factorise | | |
|  | Factorise | | |
|  | Complete the table of values below.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | -2 | 2 | 5 | 20 | |  |  |  |  |  | | | |

Further Algebraic Techniques

ANSWERS

|  |
| --- |
| Non Calculator Section ( 1 mark each) |

|  |  |  |
| --- | --- | --- |
| Q no |  | Answer |
|  |  | 1st |
|  |  | 4th |
|  |  | 2nd |
|  | is not a factor of | 2nd |
|  |  | 3rd |
|  |  |  |
|  |  | 1st |
|  |  | 3rd |
|  |  | 3rd |
|  |  |  |
|  |  |  |
|  |  | 2nd |
|  |  |  |
|  |  |  |
|  |  | 4th |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 0 | 1 | 5 | 10 | |  | 1 | 3 | 11 | 21 | | |

|  |
| --- |
| Calculator Allowed Short Answer Section ( 1 mark each) |

|  |  |  |
| --- | --- | --- |
| Q no |  | Answer |
|  |  | 4th |
|  |  | 2nd |
|  |  | 2nd |
|  | Any two which are correct eg | various |
|  |  | 4th |
|  |  |  |
|  |  | 1st |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | -2 | 1 | 6 | 20 | |  | -11 | -2 | 13 | 55 | | |
|  |  | 3rd |
|  |  |  |
|  |  |  |
|  |  | 3rd |
|  |  |  |
|  |  |  |
|  |  | 1st |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | -2 | 2 | 5 | 20 | |  |  |  |  |  | | |