|  |  |  |  |
| --- | --- | --- | --- |
| *School Name*  *Mathematics Test 2017* | | | |
| Year 8 | | *Further Algebraic Techniques* | Non Calculator  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 **not** allowed. | | | |
|  | Simplify | | |
|  | Simplify . | | |
|  | ?  4 6 8 9 | | |
|  | Which product below gives an answer of | | |
|  | . | | |
|  |  | | |
|  |  | | |
|  | The table below is completed by substituting the *x* values given into .   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  |  |  | A | B |   What two values should replace A and B? | | |
|  |  | | |
|  |  | | |
|  | Which is not a factor of | | |
|  | Factorise | | |
|  | Factorise | | |
|  | Factorise | | |
|  |  | | |
|  |  | | |
|  | Factorise | | |
|  | Factorise | | |
|  | Simplify | | |
|  | Complete the table of values below.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 0 | 1 | 2 | 3 | |  |  |  |  |  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| *School Name*  *Mathematics Test 2017* | | | |
| Year 8 | | *Further Algebraic Techniques* | 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 | | |
|  | 16.25 17.5 24.5 25.0 | | |
|  |  | | |
|  | Write two algebraic terms which have a sum of  + = | | |
|  |  | | |
|  |  | | |
|  | Complete the table below by substituting the *x* values given into   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  | 1 |  | 7 |  | | | |
|  |  | | |
|  |  | | |
|  |  | | |
|  | Factorise | | |
|  | Factorise | | |
|  | Factorise | | |
|  |  | | |
|  |  | | |
|  | Factorise | | |
|  | Factorise | | |
|  | Simplify | | |
|  | Simplify | | |

|  |  |  |
| --- | --- | --- |
| *School Name*  *Mathematics Test 2017* | | |
| Year 8 | *Further Algebraic Techniques* | Non Calculator Section |

ANSWERS

| Question | Working and Answer |
| --- | --- |
|  | **3rd Answer** |
|  | **4th Answer** |
|  | **2nd Answer** |
|  | **1st Answer** |
|  | **3rd Answer** |
|  |  |
|  |  |
|  | **2nd Answer** |
|  |  |
|  |  |
|  | is not a factor as there is only one factor of *b* in 30*a*2*b*.  **1st Answer** |
|  | **4th Answer** |
|  |  |
|  |  |
|  | **3rd Answer** |
|  |  |
|  |  |
|  |  |
|  | **2nd Answer** |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 0 | 1 | 2 | 3 | |  | 12 | 11 | 8 | 3 | |

|  |  |  |
| --- | --- | --- |
| *School Name*  *Mathematics Test 2017* | | |
| Year 8 | *Further Algebraic Techniques* | Calculator Allowed  Short Answer  Section |

ANSWERS

|  |  |
| --- | --- |
| Question | Working and Answer |
|  | **3rd Answer** |
|  | **1st Answer** |
|  | **2nd Answer** |
|  | **3rd Answer** |
|  | Any two like terms in *x*2 which sum to 15*x*2  e.g. 10*x*2 + 5*x*2 or 7*x*2 + 8*x*2 |
|  |  |
|  |  |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  | 1 | **-3** | 7 | **21** | |
|  |  |
|  |  |
|  | **4th Answer** |
|  | **2nd Answer** |
|  |  |
|  |  |
|  | **3rd Answer** |
|  |  |
|  | **1st Answer** |
|  |  |
|  | **1st Answer** |
|  |  |