Gulf English School Term 2 Part 1 Year 9 Mathematics

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| TOPIC Algebra |

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| Themes: Finding factors, factorising quadratics, finding the difference of two squares, constructing formulae, substitution, changing the subject, arithmetic progression, geometric progression, simultaneous equations. | Level: Year 9 |
| Objectives: *To manipulate algebraic expressions, to construct algebraic statements, to simplify and manipulate algebraic expressions by expanding products of two binomials and factorising quadratic expressions of the form ax² + bx + c, to argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments, to translate simple situations or procedures into algebraic expressions or formulae, to solve, in simple cases, two linear simultaneous equations in two variables algebraically, to derive an equation (or two simultaneous equations), to solve the equation(s) and interpret the solution, to find approximate solutions to simultaneous equations using a graph.* |

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| Focussing Questions | Key Words |
| **1. Factorising*** The answer is x² + 10x + c. Show me a possible question. And another. And another
* Convince me that (x + 3)(x + 4) does not equal x² + 7.
* What is wrong with this statement? How can you correct it? (x + 3)(x + 4) ≡ x2 + 12x + 7.
* Jenny thinks that (x – 2)2 = x2 – 4. Do you agree with Jenny? Explain your answer.
	+ Assessment: Topic Test

**2. Formulae*** Convince me a0 = 1.
* What is wrong with this statement and how can it be corrected: 52 × 54 = 58 ?
* Jenny thinks that if y = 2x + 1 then x = (y – 1)/2. Kenny thinks that if y = 2x + 1 then x = y/2 – 1. Who do you agree with? Explain your thinking.
	+ Assessment: Topic Test

**3. Simultaneous Equations*** Show me a solution to the equation 5a + b = 32. And another, and another …
* Show me a pair of simultaneous equations with the solution x = 2 and y = -5. And another, and another …
* Kenny and Jenny are solving the simultaneous equations x + 4y = 7 and x – 2y = 1.
* Kenny thinks the equations should be added. Jenny thinks they should be subtracted. Who do you agree with? Explain why.
	+ Assessment: Topic Test

Assessment: Cumulative half term test | **Inequality****Identity****Equivalent****Equation****Formula, Formulae****Expression****Expand****Linear****Quadratic** **Product****Variable****Term****Coefficient****Common factor****Factorise****Power****Indices****Formula, Formulae****Subject****Change the subject****Equation****Simultaneous equation****Variable****Manipulate****Eliminate****Solve****Derive****Interpret** | Explaining wordsMy rationale for … is…The definition of … states that… so…Therefore...Hence… |

**TEXT BOOK: COLLINS CAMBRIDGE IGCSE**