

SCHEME OF WORK FORM THREE MATHEMATICS TERM ONE YEAR 2018							
WK NO.		TOPIC / SUBTOPIC	LESSON OBJECTIVES	TEACHING / LEARNING ACTIVITIES	MATERIALS / RESOURCES	REFERE-NCES	REMARKS
1	1	QUADRATIC EXPRESSIONS AND EQUATIONS Perfect squares.	<i>By the end of the lesson, the learner should be able to:</i> Factorise quadratic expressions. Identify perfect squares.	Questioning to review quadratic expressions. Oral exercise; Written exercise.		<i>KLB BK III Pg 1</i>	
	2	Completing the square. <i>(last term not given)</i>	By the end of the lesson, the learner should be able to: Make quadratic expressions perfect squares when last term is not given.	Guided discovery; Supervised practice; Written exercise.		<i>KLB BK III Pgs 2 - 3</i>	
	3	Completing the square. <i>(middle term not given)</i>	By the end of the lesson, the learner should be able to: Make quadratic expressions perfect squares when middle term is not given.	Worked examples; Supervised practice; Written exercise. Exercise review.		<i>KLB BK III Pgs 3 - 4</i>	
	4	Quadratic equations. <i>(1 as coefficient of x)</i>	By the end of the lesson, the learner should be able to: Solve quadratic equations by completing the square.	Worked examples; Supervised practice; Written exercise; Exercise review.	Calculators.	<i>KLB BK III Pgs 5 - 6</i>	
	5	Quadratic equations. <i>(coefficient greater than 1)</i>	By the end of the lesson, the learner should be able to: Solve quadratic equations by completing the square.	Worked examples; Supervised practice; Written exercise; Exercise review.	Calculators.	<i>KLB BK III Pgs 3 - 4</i>	
	6	The quadratic formula.	By the end of the lesson, the learner should be able to: Derive and recall the quadratic formula.	Review completing the square; Guided derivation of formula.		<i>KLB BK III Pgs 7 - 8</i>	

	7	The quadratic formula.	By the end of the lesson, the learner should be able to: Use the quadratic formula to solve quadratic equations.	Questioning to identify coefficients; Worked examples; Supervised practice; Written exercise; Exercise review.		<i>KLB BK III Pgs 7 - 8</i>	
2	1	Formulating quadratic equations.	By the end of the lesson, the learner should be able to: Formulate quadratic equations from given situations.	Guided discovery; Worked examples.		<i>KLB BK III Pgs 9-10</i>	
	2	Solutions of formulated quadratic equations.	By the end of the lesson, the learner should be able to: Find solutions of formulated quadratic equations.	Supervised practice; Written exercise; Exercise review.		<i>KLB BK III Pgs 10-12</i>	
	3	Tables of quadratic functions.	By the end of the lesson, the learner should be able to: Fill in tables of quadratic functions.	Completing tables; Oral exercises; Written exercise.		<i>KLB BK III Pgs 12-14</i>	
	4,5	Graphs of quadratic functions.	By the end of the lesson, the learner should be able to: Draw graphs of quadratic functions.	Plotting graphs; Supervised practice; Written exercise.	Graph papers, geoboard.	<i>KLB BK III Pgs 12-14</i>	
	6,7	Graphical solutions of quadratic equations.	By the end of the lesson, the learner should be able to: Obtain solutions of quadratic equations from graphs.	Guided discovery; Oral and written exercises.	Graph papers, geoboard.	<i>KLB BK III Pgs 15-19</i>	

3	1,2	Graphical solutions of simultaneous equations.	By the end of the lesson, the learner should be able to: Solve two simultaneous equations graphically.	Review equations of a line, a quadratic function; Worked example; Written exercise.	Graph papers, geoboard.	<i>KLB BK III Pgs 20-21</i>	
	3	Further graphical solutions.	By the end of the lesson, the learner should be able to: Solve simultaneous equations graphically.	Guided discovery; Worked examples; Written exercises; Exercise review, Problem solving.	Graph papers, geoboard.	<i>KLB BK III Pgs 21-23</i>	
	4,5	APPROXIMATIONS AND ERRORS Basic calculator operations.	By the end of the lesson, the learner should be able to: Use a calculator to perform basic operations.	Displaying figures and signs on a calculator; Hands-on practice. Oral exercise; Written exercise.	Calculator.	<i>KLB BK III Pgs 24-28</i>	
	6,7	Roots and powers using a calculator.	By the end of the lesson, the learner should be able to: Find roots and powers of numbers using a calculator.	Displaying figures and signs on a calculator; Hands-on practice. Oral exercise; Written exercise.	Calculator.	<i>KLB BK III Pgs 26-28</i>	
4	1	Approximation by rounding off numbers.	By the end of the lesson, the learner should be able to: Round off numbers.	Oral and written exercises.		<i>KLB BK III Pgs 29-31</i>	

	2	Approximation by truncating.	By the end of the lesson, the learner should be able to: Truncate a figure to given number of dec. places.	Worked examples; Oral and written exercises.		<i>KLB BK III Pgs 29-31</i>	
	3,4	Accuracy and errors. Absolute error.	By the end of the lesson, the learner should be able to: Identify lower and upper limits of a measured value. Find absolute error of a measured value.	Exposition of new terms; Oral and written exercises.	Calculator.	<i>KLB BK III Pgs 31-32</i>	
	5,6	Relative and percentage error.	By the end of the lesson, the learner should be able to: Find relative and percentage errors of a measured value.	Exposition of new terms; Guided discovery; Oral and written exercises.	Calculator.	<i>KLB BK III Pgs 32-33</i>	
	7	Round off error.	By the end of the lesson, the learner should be able to: Find error introduced by rounding off a figure.	Q/A to review rounding off; Oral and written exercises.	Calculator.	<i>KLB BK III Pgs 34-35</i>	
5	1	Truncation error.	By the end of the lesson, the learner should be able to: Find error introduced by truncating a figure.	Worked examples; Written exercise.	Calculator.	<i>KLB BK III Pgs 34-35</i>	
	2	Error propagated in a sum.	By the end of the lesson, the learner should be able to: Find error introduced when two figures are added.	Guided discovery; Worked examples; Supervised practice. Written exercise.	Calculator.	<i>KLB BK III Pgs 35-36</i>	

	3	Error in a difference of two numbers.	By the end of the lesson, the learner should be able to: Find error introduced when a figure is subtracted from another.	Guided discovery; Worked examples; Supervised practice. Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 35-36</i>	
	4	Error in a sum and a difference.	By the end of the lesson, the learner should be able to: Find error introduced by both addition and subtraction.	Guided discovery; Worked examples; Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 38-39</i>	
	5	Error in a product.	By the end of the lesson, the learner should be able to: Find error introduced when two figures are multiplied.	Guided discovery; Worked examples; Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 36-37</i>	
	6	Error propagated by division.	By the end of the lesson, the learner should be able to: .	Worked examples. Group activities. Exercise review.	Calculator.	<i>KLB BK III</i> <i>Pgs 37-38</i>	
	7	Error propagated by division and multiplication.	By the end of the lesson, the learner should be able to: Find error propagated by division and multiplication.	Probing questions; Guided discovery; Worked examples; Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 38-40</i>	
6	1,2	Other propagated errors.	By the end of the lesson, the learner should be able to: Evaluate other propagation errors.	Drawing; Oral exercise; Measure +ve and -ve angles.	Calculator.	<i>KLB BK III</i> <i>Pgs 38-40</i>	

	2,3	TRIGONOMETRY The unit circle.	By the end of the lesson, the learner should be able to: Draw the unit circle. Identify quadrants of the unit circle.	Guided discovery; Supervised practice; Exercises.	Geometrical set, geoboard.	<i>KLB BK III</i> <i>Pgs 41-44</i>	
	4,5	Trigonometric ratios of acute angles.	By the end of the lesson, the learner should be able to: Read off sin, cos and tan of acute angles from the unit circle.	Guided discovery; Oral and written exercises.	Geometrical set, geoboard.	<i>KLB BK III</i> <i>Pgs 34 - 37</i>	
	6,7	Trigonometric ratios of angles greater than 90° .	By the end of the lesson, the learner should be able to: Read off sin, cos and tan of angles greater than 90° from the unit circle.	Guided discovery; Oral and written exercises.	Geometrical set, geoboard.	<i>KLB BK III</i> <i>Pgs 44-48</i>	
7	1	Trigonometric ratios of negative angles.	By the end of the lesson, the learner should be able to: Read off sin, cos and tan of negative angles from the unit circle.	Guided discovery; Oral and written exercises.	Geoboard; Graph books.	<i>KLB BK III</i> <i>Pgs 48-49</i>	
	2	Trigonometric ratios of angles greater than 360° .	By the end of the lesson, the learner should be able to: Read off sin, cos and tan of angles greater than 360° from the unit circle.	Guided discovery; Supervised practice; Mixed exercises; Exercise review.	Geoboard; Graph books.	<i>KLB BK III</i> <i>Pgs 49-51</i>	
	3,4	Trigonometric ratios using mathematical tables.	By the end of the lesson, the learner should be able to: Read off sin, cos and tan of angles from mathematical tables.	Guided discovery; Supervised practice; Mixed exercises; Exercise review.	Mathematical tables.	<i>KLB BK III</i> <i>Pgs 51-54</i>	

	5-7	C.A.T. & MID TERM BREAK					
8	1,2	Solution of trig. equations.	By the end of the lesson, the learner should be able to: Solve trigonometric equations.	Practical activities; Supervised practice; Written exercise.	Mathematical tables.	<i>KLB BK III</i> <i>Pgs 55-56</i>	
	3,4	Angle whose trig. ratio is given.	By the end of the lesson, the learner should be able to: Find an angle whose trig. ratio is given.	Guided discovery; Mixed exercises; Exercise review.	Mathematical tables.	<i>KLB BK III</i> <i>Pgs 51-54</i>	
	5	Trigonometric ratios using a calculator.	By the end of the lesson, the learner should be able to: Find sin, cos and tan of angles using a calculator.	Oral exercise; Supervised practice; Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 48-60</i>	
	6,7	Trigonometric ratios using a calculator.	By the end of the lesson, the learner should be able to: Find sin, cos and tan of angles using a calculator.				
9	1,2	Radian measure.	By the end of the lesson, the learner should be able to: Define a radian. Express degrees in radians.	Exposition of new concepts; Completing tables. Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 58-61</i>	
	3,4	Trigonometric ratios of angles in radians.	Find sin, cos and tan of angles in radians.	Exposition of new concepts; Completing tables. Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 58-61</i>	

	5,6	Simple trigonometric graphs.	By the end of the lesson, the learner should be able to: Draw graphs of simple trigonometric expressions.	Completing tables of values; Supervised practice; Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 62-65</i>	
	7	Other trigonometric graphs.	By the end of the lesson, the learner should be able to: Draw graphs of trigonometric expressions on same axes.	Completing tables of values; Supervised practice; Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 61 - 63</i>	
10	1	The sine rule.	By the end of the lesson, the learner should be able to: Recall the sine rule.	Exposition leading to discovery.		<i>KLB BK III</i> <i>Pgs 65-68</i>	
	2,3	Application of the sine rule.	By the end of the lesson, the learner should be able to: Use the sine rule to solve triangles.	Worked examples; Problem solving; Exercise review.	Calculator.	<i>KLB BK III</i> <i>Pgs 68-71</i>	
	4	The cosine rule.	By the end of the lesson, the learner should be able to: Recall the cosine rule.	Exposition leading to discovery.		<i>KLB BK III</i> <i>Pgs 71-72</i>	
	5,6	Application of the cosine rule.	By the end of the lesson, the learner should be able to: Use the cosine rule to solve triangles.	Worked examples; Problem solving; Exercise review.	Calculator.	<i>KLB BK III</i> <i>Pgs 73-75</i>	
	7	Application of both sine and cosine rules.	By the end of the lesson, the learner should be able to: Solve triangles using both sine and cosine rules.	Worked examples; Problem solving; Exercise review.		<i>KLB BK III</i> <i>Pgs 76-77</i>	

11	1	SURDS Irrational numbers.	By the end of the lesson, the learner should be able to: Identify rational and irrational numbers. Define a surd.	Probing questions; Exposition.		<i>KLB BK III</i> 78-79	
	2,3	Simplification of surds.	By the end of the lesson, the learner should be able to: Identify order of surds. Simplify surds.	Oral exercise; Written exercise.		<i>KLB BK III</i> Pgs 79-80	
	4,5	Addition and subtraction of surds.	By the end of the lesson, the learner should be able to: Add and subtract surds.	Q/A to review order of surds; Worked examples; Oral exercise; Written exercise.		<i>KLB BK III</i> Pgs 88 - 96	
	6,7	Multiplication of surds.	By the end of the lesson, the learner should be able to: Obtain product of surds.	Worked examples; Oral exercise; Written exercise.		<i>KLB BK III</i> Pgs 81-84	

12, 13		<i>END OF TERM ONE EXAM</i>	
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SCHEME OF WORK FORM THREE MATHEMATICS TERM TWO YEAR 20.....							
WK NO.		TOPIC / SUBTOPIC	LESSON OBJECTIVES	TEACHING / LEARNING ACTIVITIES	MATERIALS / RESOURCES	REFERE-NCES	REMARKS
1	1,2	Division of surds.	By the end of the lesson, the learner should be able to: Obtain quotient of two surds.	Worked examples; Oral exercise; Written exercise.		<i>KLB BK III Pgs 81-84</i>	
	3	Rationalizing a fraction having a surd.	By the end of the lesson, the learner should be able to: Rationalize denominator of a fraction.	Worked examples; Supervised practice; Written exercise.		<i>KLB BK III Pgs 85-86</i>	

	4,5	Rationalizing using a conjugate.	By the end of the lesson, the learner should be able to: Rationalize denominator of a fraction using a conjugate.	Worked examples; Supervised practice; Written exercise.		<i>KLB BK III Pgs 86-87</i>	
	6,7	Rationalizing and simplification. (problem solving)	By the end of the lesson, the learner should be able to: Rationalize and simplify expressions.	Review trigonometric ratios expressed in surd form; Problem solving, Review mixed exercise.		<i>KLB BK III Pgs 87-88</i>	
2	1,2	FURTHER LOGS Laws of logs.	By the end of the lesson, the learner should be able to: Recall the laws of logs.	Review laws of indices; Probing questions leading to derivation of laws of logs.		<i>KLB BK III Pgs 89-91</i>	
	3,4	Application of laws of logs.	By the end of the lesson, the learner should be able to: Apply the laws of logs in evaluating expressions.	Review laws of logs; Worked examples; Supervised practice; Exercises. Review of exercises.		<i>KLB BK III Pgs 92-93</i>	
	5,6	Logarithmic equations and expressions.	By the end of the lesson, the learner should be able to: Evaluate logarithmic expressions. Solve logarithmic equations.	Review laws of logs; Worked examples; Supervised practice; Exercises.	Calculator.	<i>KLB BK III Pgs 93-95</i>	
	7	Further logarithmic equations and expressions.	By the end of the lesson, the learner should be able to: Solve further logarithmic equations	Worked examples; Supervised practice; Mixed exercises. Exercise review.	Calculator.	<i>KLB BK III Pgs 96-97</i>	

3	1	COMMERCIAL ARITHMETIC (II) Simple interest.	By the end of the lesson, the learner should be able to: Find simple interest earned.	Q/A to review simple interest formula; Worked examples; Written exercise.	Calculator.	<i>KLB BK III Pgs 98-99</i>	
	2,3	Rate of interest, principal and amount.	By the end of the lesson, the learner should be able to: Find rate of interest, principal and amount.	Worked examples; Written exercise.	Calculator.	<i>KLB BK III Pgs 100-1</i>	
	4,5	Compound interest formula.	By the end of the lesson, the learner should be able to: Recall the compound interest formula.	Exposition leading to discovery of formula;	Calculator.	<i>KLB BK III Pgs 102-3</i>	
	6,7	Applying compound interest formula.	By the end of the lesson, the learner should be able to: Apply compound interest formula.	Worked examples; Supervised practice; Written exercise; Exercise review.	Calculator.	<i>KLB BK III Pgs 105-7</i>	
4	1	Appreciation.	By the end of the lesson, the learner should be able to: Find value of an item after appreciation.	Q/A to review compound interest formula. Worked examples; Written exercise; Exercise review.	Calculator.	<i>KLB BK III Pgs 108-110</i>	
4	2	Depreciation.	By the end of the lesson, the learner should be able to: Find value of an item after depreciation.	Q/A to review compound interest formula. Worked examples; Written exercise; Exercise review.	Calculator.	<i>KLB BK III Pgs 108-110</i>	

	3,4	Hire purchase.	By the end of the lesson, the learner should be able to: Find cost of an item when bought on hire purchase.	Worked examples; Written exercise; Exercise review.	Calculator.	<i>KLB BK III</i> <i>Pgs 110-112</i>	
	5	Taxable income.	By the end of the lesson, the learner should be able to: Define income tax. Define taxable income, rate of taxation and relief. Find taxable income.	Probing questions; Exposition of new terms Oral exercise; Simple exercise.	Calculator, income tax tables.	<i>KLB BK III</i> <i>Pgs 112-4</i>	
	6,7	Income tax and PAYE.	By the end of the lesson, the learner should be able to: Determine PAYE remitted by a tax payer.	Worked examples; Exercises.	Mathematical tables.	<i>KLB BK III</i> <i>Pgs 115-6</i>	
5	1,2	PAYE under special conditions.	By the end of the lesson, the learner should be able to: Calculate income tax paid under special conditions.	Exposition of special conditions, e.g. free housing, insurance policies, special benefits, share dividends, etc. Worked examples; Exercises.		<i>KLB BK III</i> <i>Pgs 116-8</i>	
	3,4	Income tax (mixed exercise)	By the end of the lesson, the learner should be able to: Work out sums involving income tax	Mixed exercise. Problem solving; Reversing income tax computation to find taxable income.	Past exam papers.	<i>KLB BK III</i> <i>Pgs 116-8</i>	

5	5,6	CIRCLES- CHORD AND TANGENTS Length of an arc.	By the end of the lesson, the learner should be able to: Find the length of an arc. Find angle subtended by an arc.	Q/A to review area of a circle; Worked examples; Written exercise.	Calculator.	<i>KLB BK III</i> <i>Pgs 124-6</i>	
	7	Perpendicular bisector of a chord.	By the end of the lesson, the learner should be able to: Construct a perpendicular bisector of a chord.	Geometrical construction; Problem solving.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 127-8</i>	
6	1,2	Parallel chords.	By the end of the lesson, the learner should be able to: Construct parallel chords. Solve problems involving parallel chords.	Geometrical construction; Problem solving.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 129-131</i>	
	3,4	Equal chords.	By the end of the lesson, the learner should be able to: Identify properties of equal chords.	Geometrical construction; Guided discovery; Problem solving.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 131-2</i>	
	5	Internally intersecting chords.	By the end of the lesson, the learner should be able to: Identify internally intersecting chords. Work out sums involving internally intersecting chords.	Geometrical construction; Worked examples; Written exercise.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 132-4</i>	

	6,7	Externally intersecting chords.	By the end of the lesson, the learner should be able to: Identify externally intersecting chords. Work out sums involving externally intersecting chords.	Geometrical construction; Worked examples; Written exercise; Mixed exercise Exercise review.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 134-9</i>	
7	1	Tangent to circle.	By the end of the lesson, the learner should be able to: Identify a tangent and a secant. Construct a tangent to a circle.	Geometrical construction; Making deductions; Simple problem solving.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 139-142</i>	
	2,3	Tangents from a common point.	By the end of the lesson, the learner should be able to: Construct tangents to a circle.	Geometrical construction; Making deductions; Simple problem solving.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 142-8</i>	
	4-7	C.A.T & MID TERM BREAK					
8	1,2	Tangents to two circles.	By the end of the lesson, the learner should be able to: Construct tangents to two circles.	Geometrical construction; Making deductions; Simple problem solving.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 148-151</i>	
	3,4	Internally touching circles.	By the end of the lesson, the learner should be able to: Work out calculations involving internally touching circles.	Geometrical construction; Making deductions; Problem solving.	Geometrical set.	<i>KLB BK III</i> <i>Pgs 151-157</i>	

	5,6	Externally touching circles.	By the end of the lesson, the learner should be able to: Work out calculations involving externally touching circles.	Geometrical construction; Making deductions; Problem solving.	Geometrical set.	<i>KLB BK III Pg151-7.</i>	
	7	Angle in alternate segment.	By the end of the lesson, the learner should be able to: Identify the angle in alternate segment of a circle. Find unknown angles.	Geometrical construction; Making deductions; Oral exercise; Written exercise; Exercise review.	Geometrical set.	<i>KLB BK III Pgs 157-164</i>	
9	1,2	Inscribed circle.	By the end of the lesson, the learner should be able to: Construct an inscribed circle.	Guided geometrical construction; Measuring radius, altitude, etc.	Geometrical set.	<i>KLB BK III Pgs 164-5</i>	
	3	Circumscribed circle.	By the end of the lesson, the learner should be able to: Construct an circumscribed circle.	Guided geometrical construction; Measuring radius, altitude, etc.	Geometrical set.	<i>KLB BK III Pgs 165-7</i>	
	4	Escribed circle.	By the end of the lesson, the learner should be able to: Construct an escribed circle.	Guided geometrical construction; Making inferences.	Geometrical set.	<i>KLB BK III Pgs 165-7</i>	
	5	MATRICES Order of a matrix.	By the end of the lesson, the learner should be able to: State order of a matrix. Identify elements of a matrix.	Guided discovery of what a matrix is. Probing questions.	Chart showing tabular information.	<i>KLB BK III Pgs 168-170</i>	

	6,7	Addition and subtraction of matrices.	By the end of the lesson, the learner should be able to: Work out addition and subtraction of matrices.	Worked examples; Oral exercise; Written exercise.		<i>KLB BK III Pgs 170-4</i>	
10	1,2	Multiplication of matrices.	By the end of the lesson, the learner should be able to: Work out multiplication of two matrices.	Worked examples; Supervised exercise; Written exercise.		<i>KLB BK III Pgs 177-182</i>	
	3,4	Multiplication of matrices. (contd)	By the end of the lesson, the learner should be able to: Work out multiplication of two matrices.	Worked examples; Supervised exercise; Written exercise.		<i>KLB BK III Pgs 177-182</i>	
10	5	Determinant of a matrix.	By the end of the lesson, the learner should be able to: Find determinant of a matrix.	Exposition of identity matrix, determinant of a matrix. Simple problem solving.		<i>KLB BK III Pgs 182-3</i>	
	6,7	Inverse of a matrix.	By the end of the lesson, the learner should be able to: Find the inverse of a matrix.	Guided discovery that $AA^{-1} = I$; Exposition and explanations; Worked examples; Written exercise.		<i>KLB BK III Pgs 183-7</i>	
11	1,2	Solutions of simultaneous equations using matrices.	By the end of the lesson, the learner should be able to: Solve simultaneous equations using matrix method.	Worked examples; Supervised practice; Written exercises;		<i>KLB BK III Pgs 188-90</i>	
	3,4	Solutions of	By the end of the lesson, the	Exercise review;		<i>KLB BK III</i>	

		simultaneous equations using matrices.	learner should be able to: Solve simultaneous equations using matrix method.	Problem solving.		Pgs 188-90	
	5	FORMULAE AND VARIATION Subject of a formula.	By the end of the lesson, the learner should be able to: Change the subject of a simple formula.	Q/A- examples of formulae; Worked examples; Supervised practice; Written exercise.		KLB BK III Pgs 191-4	
	6,7	Subject of a formula.	By the end of the lesson, the learner should be able to: Change the subject of a complicated formula.	Examples using other formulae, Supervised practice; Written exercise.		KLB BK III Pgs 191-4	
12, 13	<i>END OF TERM EXAMINATIONS</i>						

SCHEME OF WORK		FORM THREE MATHEMATICS			TERM THREE YEAR 20.....		
WK NO.		TOPIC / SUBTOPIC	LESSON OBJECTIVES	TEACHING / LEARNING ACTIVITIES	MATERIALS / RESOURCES	REFERE-NCES	REMARKS
1	1	Direct variation.	By the end of the lesson, the learner should be able to: Evaluate expressions involving direct variation.	Probing questions; Worked examples; Oral exercise; Written exercise.		KLB BK III Pgs 194-7	

	2	Inverse variation.	By the end of the lesson, the learner should be able to: Evaluate expressions involving inverse variation.	Probing questions; Drawing a graph showing inverse variation; Worked examples; Oral exercise; Written exercise.		<i>KLB BK III Pgs 197-201</i>	
	3,4	Partial variation.	By the end of the lesson, the learner should be able to: Evaluate given expressions involving partial variation.	Exposition; Worked examples; Oral exercise; Written exercise.		<i>KLB BK III Pgs 201-4</i>	
	5	Formulating expressions on partial variation.	By the end of the lesson, the learner should be able to: Formulate expressions involving partial variation. Evaluate formulated expressions involving partial variation.	Exposition; Worked examples; Oral exercise; Written exercise.		<i>KLB BK III Pgs 201-4</i>	
	6,7	Joint variation.	By the end of the lesson, the learner should be able to: Evaluate given expressions involving joint variation.	Review direct and inverse variation; Worked examples; Written exercise.		<i>KLB BK III Pgs 204-5</i>	
2	1	Further joint variation.	By the end of the lesson, the learner should be able to: Evaluate expressions involving joint variation and changing variables.	Worked examples; Written exercise; Exercise review.		<i>KLB BK III Pgs 205-6</i>	

	2	SEQUENCES AND SERIES Sequences.	By the end of the lesson, the learner should be able to: Determine the n^{th} term in a sequence. Deduce the rule used in a sequence.	Guided discovery; Oral exercise; Written exercise.		<i>KLB BK III Pgs 207-8</i>	
	3,4	Arithmetic sequence.	By the end of the lesson, the learner should be able to: Identify an arithmetic sequence. Find unknown terms in an arithmetic sequence.	Guided discovery; Oral exercise; Written exercise.		<i>KLB BK III Pgs 209-11</i>	
	5	Geometric sequence.	By the end of the lesson, the learner should be able to: Identify a geometric sequence. Find unknown terms in a geometric sequence.	Guided discovery; Oral exercise; Written exercise.		<i>KLB BK III Pgs 211-4</i>	
	6,7	Arithmetic progression.	By the end of the lesson, the learner should be able to: Find number of terms in an A.P. Find sum of given terms of an A.P.	Exposition; Supervised practice; Written exercise.		<i>KLB BK III Pgs 214-6</i>	
3	1	Geometric progression.	By the end of the lesson, the learner should be able to: Find number of terms in a G.P. Find sum of given terms of a G.P.	Guided discovery; Oral exercise; Written exercise.		<i>KLB BK III Pgs 216-220</i>	

	2,3	Arithmetic and geometric progressions.	By the end of the lesson, the learner should be able to: Work out expressions involving both arithmetic and geometric progressions.	Worked examples; Supervised practice; Mixed exercise.	Past exam papers.	<i>KLB BK III Pgs 216-220</i>	
3	4	VECTORS (II) Co-ordinates of a point in three dimensions.	By the end of the lesson, the learner should be able to: State co-ordinates of a point in three dimensions.	Q/A to review co-ordinates in two dimensions. Exposition of Z-axis; Oral exercise;	<i>Wire mesh in three dimensions.</i>	<i>KLB BK III Pgs 221-2</i>	
	5,6	Column vectors.	By the end of the lesson, the learner should be able to: Find a column vector given two points.	Q/A to review column vector and position vectors in two dimensions; Worked examples; Written exercise.		<i>KLB BK III Pgs 223-6</i>	
	7	Column vectors in terms of unit vectors.	By the end of the lesson, the learner should be able to: Find a column vectors in terms of unit vectors.	Q/A to review unit vectors in two dimensions; Worked examples; Oral exercise; Written exercise.		<i>KLB BK III Pgs 226-8</i>	
4	1,2	Magnitude of a vector	By the end of the lesson, the learner should be able to: Find magnitude of a vector in three dimensions.	Q/A to review magnitude of a vector in two dimensions; Worked examples; Oral exercise; Written exercise.		<i>KLB BK III Pgs 229-230</i>	

	3,4	Parallel vectors.	By the end of the lesson, the learner should be able to: Identify parallel vectors.	Worked examples; Oral exercise; Written exercise.	Geoboard.	<i>KLB BK III Pgs 231-2</i>	
4	5,6	Collinear points.	By the end of the lesson, the learner should be able to: Show that three points are collinear.	Worked examples; Oral exercise; Written exercise.	Geoboard.	<i>KLB BK III Pgs 231-2</i>	
	7	Parallel vectors and collinear points.	By the end of the lesson, the learner should be able to: Evaluate parallel vectors and collinear points.	Worked examples; Oral exercise; Written exercise.	Past exam papers.	<i>KLB BK III Pgs 233-7</i>	
5	1,2	Internal division of a line.	By the end of the lesson, the learner should be able to: Determine the ratio a point divides a segmented line.	Oral exercise; Written exercise.		<i>KLB BK III Pgs 237-8</i>	
	3,4	External division of a line.	By the end of the lesson, the learner should be able to: Determine the ratio an external point divides a segmented line.	Oral exercise; Written exercise.		<i>KLB BK III Pgs 238-9</i>	
	5,6	The ratio theorem.	By the end of the lesson, the learner should be able to: Apply the ratio theorem.	Guided discovery; Worked examples.		<i>KLB BK III Pgs 240-8</i>	

	7	Using the ratio theorem.	By the end of the lesson, the learner should be able to: Apply the ratio theorem.	Guided discovery; Worked examples.		<i>KLB BK III Pgs 240-8</i>	
6	1	Vectors and geometry.	By the end of the lesson, the learner should be able to: Apply vectors in geometry.	Worked examples. Oral exercise; Written exercise; Exercise review.		<i>KLB BK III Pgs 249-250</i>	
	2	BINOMIAL EXPANSIONS Pascal's triangle.	By the end of the lesson, the learner should be able to: Use Pascal's triangle to determine coefficients of terms of a binomial expressions.	Q/A to review expansion of quadratic expressions; Exposition of new concepts	Mathematical tables.	<i>KLB BK III Pgs 256-8</i>	
	3	Binomial expressions.	By the end of the lesson, the learner should be able to: Expand binomial expressions.	Worked examples; Supervised practice; Written exercise.	Mathematical tables.	<i>KLB BK III Pgs 256-8</i>	
	4	Further binomial expressions.	By the end of the lesson, the learner should be able to: Expand further binomial expressions.	Worked examples; Supervised practice; Written exercise.	Mathematical tables.	<i>KLB BK III Pgs 258-9</i>	
	5	Applications of binomial expressions.	By the end of the lesson, the learner should be able to: Evaluate binomial expressions.	Worked examples; Supervised practice; Compare results with a calculator; Written exercise.	Mathematical tables, calculator.	<i>KLB BK III Pgs 260-1</i>	

	6,7	Further applications of binomial expressions.	By the end of the lesson, the learner should be able to: Evaluate further binomial expressions.	Worked examples; Supervised practice; Compare results with a calculator; Written exercise; Exercise review.	Mathematical tables, calculator.	<i>KLB BK III Pgs 260-1</i>	
7	1	PROBABILITY Experimental probability.	By the end of the lesson, the learner should be able to: Define probability. Find experimental probability.	Practical activities; Guided discovery; Simple problem solving.		<i>KLB BK III Pgs 262-6</i>	
	2	Probability sample space.	By the end of the lesson, the learner should be able to: Define a probability sample space. Determine probability sample space.	Exposition leading to discovery of sample space; Simple problem solving.		<i>KLB BK III Pgs 266-270</i>	
	3	Theoretical probability	By the end of the lesson, the learner should be able to: Find theoretical probability from given situations.	Worked examples; Written exercise.		<i>KLB BK III Pgs 270-2</i>	
	4,5	Mutually exclusive events.	By the end of the lesson, the learner should be able to: Identify mutually exclusive events. Determine probability of mutually exclusive events.	Exposition; Worked examples; Written exercise.		<i>KLB BK III Pgs 272-4</i>	
	6,7	C.A.T & MID TERM BREAK				<i>KLB BK III Pgs 274-6</i>	

8	1	Independent events.	By the end of the lesson, the learner should be able to: Identify independent events. Determine probability of independent events.	Exposition; Worked examples; Written exercise.			
	2	Independent and mutually exclusive events.	By the end of the lesson, the learner should be able to: Determine probability of both independent and mutually exclusive events.	Worked examples; Supervised practice; Written exercise.		<i>KLB BK III Pgs 277-282</i>	
	3	Further independent and mutually exclusive events.	By the end of the lesson, the learner should be able to: Determine probability of both independent and mutually exclusive events.	Problem solving; Exercise review.		<i>KLB BK III Pgs 277-282</i>	
	4	Tree diagrams.	By the end of the lesson, the learner should be able to: Illustrate probability spaces with tree diagrams.	Guided discovery; Completing tree diagrams; Worked examples; Supervised practice; Written exercise.		<i>KLB BK III Pgs 282-7</i>	
	5,6	Probability using tree diagrams.	By the end of the lesson, the learner should be able to: Use tree diagrams to work out probability.	Guided discovery; Worked examples; Supervised practice; Written exercise; Exercise review.		<i>KLB BK III Pgs 282-7</i>	
	7	Further tree diagrams.	By the end of the lesson, the learner should be able to: Use tree diagrams to work out probability.	Guided discovery; Worked examples; Supervised practice; Written exercise; Exercise review.		<i>KLB BK III Pgs 282-7</i>	

9	1	COMPOUND PROPORTION AND RATE OF WORK Proportion.	By the end of the lesson, the learner should be able to: Identify values that make continued proportions. Evaluate proportional expressions.	Probing questions; Simple problem solving; Oral exercise; Written exercise.		<i>KLB BK III Pgs 288-291</i>	
	2	Proportional parts.	By the end of the lesson, the learner should be able to: Divide a figure in given proportional parts.	Worked examples; Supervised practice; Written exercise.		<i>KLB BK III Pgs 291-3</i>	
	3	Rates of work.	By the end of the lesson, the learner should be able to: Evaluate sums on rates of work.	Worked examples; Supervised practice; Written exercise; Problem solving.		<i>KLB BK III Pgs 294-8</i>	
	4	Mixtures.	By the end of the lesson, the learner should be able to: Work out numerical questions involving mixtures.	Worked examples; Supervised practice; Written exercise; Problem solving.		<i>KLB BK III Pgs 295-8</i>	
	5	Rates of work and mixtures.	By the end of the lesson, the learner should be able to: Work out numerical questions involving rates of work and mixtures.	Problem solving; Exercise review.		<i>KLB BK III Pgs 294-8</i>	

	6	GRAPHICAL METHODS Tables of functions.	By the end of the lesson, the learner should be able to: Complete tables of given functions.	Completing tables.	Calculator.	<i>KLB BK III Pgs 299-300</i>	
	7	Graphs of functions.	By the end of the lesson, the learner should be able to: Draw graphs of given functions.	Completing tables; Drawing graphs; Reading off values from the graphs.	Calculator, Graph books.	<i>KLB BK III Pgs 300-1</i>	
10	1	Cubic expressions.	By the end of the lesson, the learner should be able to: Identify cubic expressions. Draw graphs for cubic expressions.	Completing tables; Drawing graphs; Reading off values from the graphs.	Calculator, Graph books.	<i>KLB BK III Pgs 300-1</i>	
	2	Solutions of cubic equations.	By the end of the lesson, the learner should be able to: Use graphs to find solutions of cubic equations.	Completing tables; Drawing graphs; Reading off values from the graphs; Solving equations.	Calculator, Graph books.	<i>KLB BK III Pgs 301-4</i>	
	3	Average rate of change.	By the end of the lesson, the learner should be able to: Determine average rate of change of a variable with another.	Interpreting graphs; Drawing graphs; Worked examples; Written exercise.	Graph books.	<i>KLB BK III Pgs 304-9</i>	
	4	Instantaneous rate of change.	By the end of the lesson, the learner should be able to: Determine rate of change of a variable at an instant.	Interpreting graphs; Worked examples; Written exercise.	Graph books.	<i>KLB BK III Pgs 309-15</i>	

10	5	Empirical graphs.	By the end of the lesson, the learner should be able to: Draw graphs from empirical situations.	Drawing graphs; Reading off values from the graphs.	Graph books.	<i>KLB BK III Pgs 315-8</i>	
	6,7	Changing non-linear laws to linear form.	By the end of the lesson, the learner should be able to: Change non-linear laws to linear form. Complete tables for linear forms.	Reduction of laws; Completing tables; Supervised practice.	Graph books.	<i>KLB BK III Pgs 318-25</i>	
11	1	Non-linear laws to linear form.	By the end of the lesson, the learner should be able to: Change non-linear laws to linear form. Draw suitable graphs from the laws.	Completing tables; Drawing graphs; Supervised practice; Written exercise.	Graph books, calculator.	<i>KLB BK III Pgs 318-25</i>	
	2	Equation of a circle, centre origin.	By the end of the lesson, the learner should be able to: Find equation of a circle with centre as origin.	Guided discovery; Worked examples; written exercise.		<i>KLB BK III Pgs 325-6</i>	
	3	Equation of a circle, centre (a, b)	By the end of the lesson, the learner should be able to: Find equation of a circle given centre (a,b)	Guided discovery; Worked examples; Supervised practice; Written exercise.		<i>KLB BK III Pgs 326-7</i>	
	4,5	Equation of a circle given its diameter.	By the end of the lesson, the learner should be able to: Find equation of a circle given its diameter.	Review midpoint of a vector; Worked examples; Supervised practice; Written exercise.		<i>KLB BK III Pgs 326-7</i>	

	6,7	Centre and radius of a circle.	By the end of the lesson, the learner should be able to: Determine centre and radius of a circle from an equation.	Review completing the square; Worked examples; Supervised practice; Written exercise.		<i>KLB BK III Pgs 328-9</i>	
<i>END OF YEAR EXAMS</i>							