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| ***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 EQUATIONSPerfect squares. | *By the end of the lesson, the learner should be able to:*Factorise quadratic expressions.Identify perfect squares. | Questioning to review quadratic expressions.Oral exercise;Written exercise. |  | *KLB BK III**Pg 1* |  |
| 2 | Completing the square.(*last term not given)* | 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. |  | *KLB BK III**Pgs 2 - 3* |  |
| 3 | Completing the square.*(middle term not given)* | 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. |  | *KLB BK III**Pgs 3 - 4* |  |
| 4 | Quadratic equations.*(1 as coefficient of x)* | 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. | *KLB BK III**Pgs 5 - 6* |  |
| 5 | Quadratic equations.*(coefficient greater than 1)* | 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. | *KLB BK III**Pgs 3 - 4* |  |
| 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. |  | *KLB BK III**Pgs 7 - 8* |  |
| 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. |  | *KLB BK III**Pgs 7 - 8* |  |
| 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. |  | *KLB BK III**Pgs 9-10* |  |
| 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. |  | *KLB BK III**Pgs 10-12* |  |
| 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. |  | *KLB BK III**Pgs 12-14* |  |
| 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. | *KLB BK III**Pgs 12-14*  |  |
| 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. | *KLB BK III**Pgs 15-19* |  |
| 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. | *KLB BK III**Pgs 20-21* |  |
| 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. | *KLB BK III**Pgs 21-23* |  |
|  | 4,5 | APPROXIMATIONS AND ERRORSBasic 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. | *KLB BK III**Pgs 24-28* |  |
| 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. | *KLB BK III**Pgs 26-28* |  |
| 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. |  | *KLB BK III**Pgs 29-31*  |  |
| 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. |  | *KLB BK III**Pgs 29-31* |  |
| 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. | *KLB BK III**Pgs 31-32* |  |
| 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. | *KLB BK III**Pgs 32-33* |  |
| 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. | *KLB BK III**Pgs 34-35* |  |
| 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. | *KLB BK III**Pgs 34-35* |  |
| 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. | *KLB BK III**Pgs 35-36* |  |
| 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. | *KLB BK III**Pgs 35-36* |  |
| 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. | *KLB BK III**Pgs 38-39* |  |
| 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. | *KLB BK III**Pgs 36-37* |  |
| 6 | Error propagated by division. | By the end of the lesson, the learner should be able to:. | Worked examples.Group activities.Exercise review. | Calculator. | *KLB BK III**Pgs 37-38* |  |
| 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. | *KLB BK III**Pgs 38-40* |  |
| 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. | *KLB BK III**Pgs 38-40* |  |
| 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, geeoboard. | *KLB BK III**Pgs 41-44* |  |
| 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, geeoboard. | *KLB BK III**Pgs 34 - 37* |  |
| 6,7 | Trigonometric ratios of angles greater than 900. | By the end of the lesson, the learner should be able to: Read off sin, cos and tan of angles greater than 900 from the unit circle. | Guided discovery;Oral and written exercises. | Geometrical set, geeoboard. | *KLB BK III**Pgs 44-48* |  |
| 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. | *KLB BK III**Pgs 48-49* |  |
| 2 | Trigonometric ratios of angles greater than 3600. | By the end of the lesson, the learner should be able to: Read off sin, cos and tan of angles greater than 3600 from the unit circle. | Guided discovery;Supervised practice;Mixed exercises;Exercise review. | Geoboard; Graph books. | *KLB BK III**Pgs 49-51* |  |
| 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. | *KLB BK III**Pgs 51-54* |  |
|  | 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. | *KLB BK III**Pgs 55-56* |  |
| 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. | *KLB BK III**Pgs 51-54* |  |
| 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. | *KLB BK III**Pgs 48-60* |  |
| 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. | *KLB BK III**Pgs 58-61* |  |
| 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. | *KLB BK III**Pgs 58-61* |  |
| 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. | *KLB BK III**Pgs 62-65* |  |
|  | 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. | *KLB BK III**Pgs 61 - 63* |  |
| 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. |  | *KLB BK III**Pgs 65-68* |  |
| 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. | *KLB BK III**Pgs 68-71* |  |
| 4 | The cosine rule. | By the end of the lesson, the learner should be able to: Recall the cosine rule. | Exposition leading to discovery. |  | *KLB BK III**Pgs 71-72* |  |
| 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. | *KLB BK III**Pgs 73-75* |  |
| 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. |  | *KLB BK III**Pgs 76-77* |  |

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| 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. |  | *KLB BK III**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. |  | *KLB BK III**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. |  | *KLB BK III**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. |  | *KLB BK III**Pgs 81-84* |  |
| 12,13 |  | *END OF TERM ONE EXAM* |  |

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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. |  | *KLB BK III**Pgs 81-84* |  |
| 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. |  | *KLB BK III**Pgs 85-86* |  |
| 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. |  | *KLB BK III**Pgs 86-87* |  |
| 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. |  | *KLB BK III**Pgs 87-88* |  |
| 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. |  | *KLB BK III**Pgs 89-91* |  |
| 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. |  | *KLB BK III**Pgs 92-93* |  |
|  | 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. | *KLB BK III**Pgs 93-95* |  |
| 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. | *KLB BK III**Pgs 96-97* |  |
| 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. | *KLB BK III**Pgs 98-99* |  |
| 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. | *KLB BK III**Pgs 100-1* |  |
| 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. | *KLB BK III**Pgs 102-3* |  |
| 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. | *KLB BK III**Pgs 105-7* |  |
| 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. | *KLB BK III**Pgs 108-110* |  |
| 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. | *KLB BK III**Pgs 108-110* |  |
| 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. | *KLB BK III**Pgs 110-112* |  |
| 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 termsOral exercise;Simple exercise. | Calculator, income tax tables. | *KLB BK III**Pgs 112-4* |  |
| 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. | *KLB BK III**Pgs 115-6* |  |
| 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. |  | *KLB BK III**Pgs 116-8* |  |
| 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. | *KLB BK III**Pgs 116-8* |  |
| 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. | *KLB BK III**Pgs 124-6* |  |
| 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. | *KLB BK III**Pgs 127-8* |  |
| 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. | *KLB BK III**Pgs 129-131* |  |
| 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. | *KLB BK III**Pgs 131-2* |  |
| 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. | *KLB BK III**Pgs 132-4* |  |
| 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 exerciseExercise review. | Geometrical set. | *KLB BK III**Pgs 134-9* |  |
| 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. | *KLB BK III**Pgs 139-142* |  |
| 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. | *KLB BK III**Pgs 142-8* |  |
| 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. | *KLB BK III**Pgs 148-151* |  |
| 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. | *KLB BK III**Pgs 151-157* |  |
| 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. | *KLB BK III**Pg151-7.* |  |
| 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. | *KLB BK III**Pgs 157-164* |  |
| 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. | *KLB BK III**Pgs 164-5* |  |
| 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. | *KLB BK III**Pgs 165-7* |  |
| 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. | *KLB BK III**Pgs 165-7* |  |
| 5 | MATRICESOrder 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. | *KLB BK III**Pgs 168-170* |  |
| 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. |  | *KLB BK III**Pgs 170-4* |  |
| 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. |  | *KLB BK III**Pgs 177-182* |  |
| 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. |  | *KLB BK III**Pgs 177-182* |  |
| 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. |  | *KLB BK III**Pgs 182-3* |  |
| 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. |  | *KLB BK III**Pgs 183-7* |  |
| 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; |  | *KLB BK III**Pgs 188-90* |  |
| 3,4 | Solutions of simultaneous equations using matrices. | By the end of the lesson, the learner should be able to:Solve simultaneous equations using matrix method. | Exercise review;Problem solving. |  | *KLB BK III**Pgs 188-90* |  |
| 5 | FORMULAE AND VARIATIONSubject 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 | *END OF TERM EXAMINATIONS* |  |

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| ***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. |  | *KLB BK III**Pgs 197-201* |  |
| 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. |  | *KLB BK III**Pgs 201-4* |  |
| 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. |  | *KLB BK III**Pgs 201-4* |  |
| 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. |  | *KLB BK III**Pgs 204-5* |  |
| 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. |  | *KLB BK III**Pgs 205-6* |  |
|  | 2 | SEQUENCES AND SERIESSequences. | By the end of the lesson, the learner should be able to:Determine the nth term in a sequence.Deduce the rule used in a sequence. | Guided discovery;Oral exercise;Written exercise. |  | *KLB BK III**Pgs 207-8* |  |
| 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. |  | *KLB BK III**Pgs 209-11* |  |
| 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. |  | *KLB BK III**Pgs 211-4* |  |
| 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. |  | *KLB BK III**Pgs 214-6* |  |
| 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. |  | *KLB BK III**Pgs 216-220* |  |
| 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. | *KLB BK III**Pgs 216-220* |  |
| 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; | *Wire mesh in three dimensions.* | *KLB BK III**Pgs 221-2* |  |
| 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. |  | *KLB BK III**Pgs 223-6* |  |
| 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. |  | *KLB BK III**Pgs 226-8* |  |
| 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. |  | *KLB BK III**Pgs 229-230* |  |
| 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. | *KLB BK III**Pgs 231-2* |  |
| 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. | *KLB BK III**Pgs 231-2* |  |
| 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. | *KLB BK III**Pgs 233-7* |  |
| 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. |  | *KLB BK III**Pgs 237-8* |  |
| 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. |  | *KLB BK III**Pgs 238-9* |  |
|  | 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. |  | *KLB BK III**Pgs 240-8* |  |
| 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. |  | *KLB BK III**Pgs 240-8* |  |
| 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. |  | *KLB BK III**Pgs 249-250* |  |
|  | 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. | *KLB BK III**Pgs 256-8* |  |
| 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. | *KLB BK III**Pgs 256-8* |  |
| 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. | *KLB BK III**Pgs 258-9* |  |
| 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. | *KLB BK III**Pgs 260-1* |  |
| 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. | *KLB BK III**Pgs 260-1* |  |
| 7 | 1 | PROBABILITYExperimental 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. |  | *KLB BK III**Pgs 262-6* |  |
|  | 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. |  | *KLB BK III**Pgs 266-270* |  |
| 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. |  | *KLB BK III**Pgs 270-2* |  |
| 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. |  | *KLB BK III**Pgs 272-4* |  |
| 6,7 | C.A.T & MID TERM BREAK |  |  | *KLB BK III**Pgs 274-6* |  |
| 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. |  | *KLB BK III**Pgs 277-282* |  |
| 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. |  | *KLB BK III**Pgs 277-282* |  |
|  | 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. |  | *KLB BK III**Pgs 282-7* |  |
| 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. |  | *KLB BK III**Pgs 282-7* |  |
| 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. |  | *KLB BK III**Pgs 282-7* |  |
| 9 | 1 | COMPOUND PROPORTION AND RATE OF WORKProportion. | 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. |  | *KLB BK III**Pgs 288-291* |  |
| 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. |  | *KLB BK III**Pgs 291-3* |  |
| 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. |  | *KLB BK III**Pgs 294-8* |  |
| 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. |  | *KLB BK III**Pgs 295-8* |  |
|  | 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. |  | *KLB BK III**Pgs 294-8* |  |
| 6 | GRAPHICAL METHODSTables of functions. | By the end of the lesson, the learner should be able to:Complete tables of given functions. | Completing tables. | Calculator. | *KLB BK III**Pgs 299-300* |  |
| 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. | *KLB BK III**Pgs 300-1* |  |
| 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. | *KLB BK III**Pgs 300-1* |  |
| 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. | *KLB BK III**Pgs 301-4* |  |
| 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. | *KLB BK III**Pgs 304-9* |  |
| 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. | *KLB BK III**Pgs 309-15* |  |
| 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. | *KLB BK III**Pgs 315-8* |  |
| 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. | *KLB BK III**Pgs 318-25* |  |
| 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. | *KLB BK III**Pgs 318-25* |  |
| 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. |  | *KLB BK III**Pgs 325-6* |  |
| 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. |  | *KLB BK III**Pgs 326-7* |  |
| 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. |  | *KLB BK III**Pgs 326-7* |  |
| 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. |  | *KLB BK III**Pgs 328-9* |  |
|  | *END OF YEAR EXAMS* |  |