

Math 4CST

Term I

Important Pre-Algebra Skills (review)

- Graphing: plotting/ labelling points
- Graphing: determining an appropriate scale
- Substitution/evaluation
- Substitution (brackets & order of operations)
- Re-arranging/solving equations
- Fractions and integers
- Ratio & proportions
- Pythagorean Theorem
- Perimeter & area (triangles, circles, quadrilaterals)
- Notation: Set, Graphic, Algebraic

Functions

- Definition/Identifying a function
- Function notation
- Domain
- Range
- Increasing/Decreasing (Variation)
- Maximum, minimum (Extrema)
- Initial value (y-intercept)
- Zeros
- Positive/Negative (Signs)

Linear Functions

- Constant/Direct/Partial variation & parameters
- Slope, initial value
- Finding the rule given point/slope
- Finding the rule given 2 points
- Finding the rule from a graph
- Graphing lines from slope/intercept form

Piecewise Functions

- Notation
- Graph

Step Functions

- Graphing & symbols
- Interval notation/Tables
- Reading the graph

Quadratic Functions

- Identifying from a graph
- Identifying from a table of values
- Finding the rule
- Transformed quadratic function: $y = a(x-h)^2 + k$
- Applications

Exponential Functions

- Finding the rule given initial value and a point
- Finding the rule given the base and a point
- Exponential word problems – solving with a table of values
- Exponential word problems – solving with an equation

Periodic Functions

- Identifying from a graph
- Determining the period
- Applications

Term II

Systems of Equations

- Solving by Comparison
- Solving by Elimination
- Solving by Substitution
- Word problems

Analytic Geometry

- Lines – slope intercept, general
- Parallel & Perpendicular Lines
- Distance between 2 points
- Midpoint
- Part to part/Part to whole ratios
- Find Internal point of division

Statistics

- Definition/Notation
- Percentile
- Mean Deviation
- Quantitative Linear Correlation
- Qualitative Linear Correlation
- Line of Regression by Mayer line
- Line of Regression by Median-Median line

Term III

Isometric Triangles

- Definition
- SSS
- SAS
- ASA

Similar Figures

- Definition
- SSS
- SAS
- AA
- Find missing sides using proportions

Trigonometry

- Definition
- Metric relations
- Sine, cosine and tangent ratios
- Finding a missing side in a right triangle
- Finding a missing angle in a right triangle
- Sine Law
- Area of triangles – basic
- Area of triangles – trig
- Area of triangles – Hero's formula
- Applications