Grade 11 Applied Mathematics (1999)	Applied Mathematics (2009)
Determine the following characteristics of a graph of a quadratic function: • Vertex • Domain and range • Axis of symmetry • Intercepts (A-1)	11A.R.2. Demonstrate an understanding of the characteristics of quadratic functions, including: • vertex • intercepts • domain and range • axis of symmetry. [CN, PS, T, V]
Use best-fit quadratic equations and their graphs to make predictions and solve problems (A-2)	11A.R.2. Demonstrate an understanding of the characteristics of quadratic functions, including: • vertex • intercepts • domain and range • axis of symmetry. [CN, PS, T, V]
Solve non-linear equations using a graphing tool (A-3)	
Plot data of exponential form using appropriate scales (A-4)	
Use best-fit exponential equations and their graphs to make predictions and to solve problems (A-5)	
Solve consumer problems, including: • Wages earned in various situations • Property taxation • Exchange rates • Unit prices (B-1)	
Reconcile chequebooks with account statements (B-2)	
Solve systems of linear equations in two variables (C-1)	
Design and solve linear equations to model problem situations (C-2)	
Graph linear inequalities in one dimension, i.e., one variable (D-1)	
Graph linear inequalities in two variables (D-2)	11A.R.1. Model and solve problems that involve systems of linear inequalities in two variables. [CN, PS, T, V]
Solve systems of linear inequalities, in two variables, graphically, using technology when appropriate (D-3)	11A.R.1. Model and solve problems that involve systems of linear inequalities in two variables. [CN, PS, T, V]
Apply linear programming to find optimal solutions to decision-making problems (D-4)	11A.R.1. Model and solve problems that involve systems of linear inequalities in two variables. [CN, PS, T, V]
Solve budget problems using graphs and tables to communicate solutions (E-1)	

C: Communication CN: Connections ME: Mental Mathematics and Estimation PS: Problem Solving
R: Reasoning T: Technology V: Visualization

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Solve investment and credit problems involving simple and compound interest (E-2)	
Plot and describe data of exponential form, using appropriate scales (E-3)	
Extract information from given graphs of discrete or continuous data using: • Time series • Glyphs • Continuous data • Contour lines (F-1)	
Draw and validate inferences including interpolations and extrapolations from graphical and tabular data (F-2)	
Design different ways of presenting and analyzing results by focusing on the truthful display of data and the clarity of presentation (F-3)	
Enlarge or reduce the diagram of a dimensioned object (G-1)	
Calculate maximum and minimum values using tolerances for lengths, areas, and volumes (G-2)	
Solve problems involving percentage error (G-3)	
Use technology to confirm the following properties of circles and polygons: • The perpendicular from the centre of a circle to a chord bisects the chord • The measure of the central angle is equal to twice the measure of the inscribed angle subtended by the same arc • The inscribed angles subtended by the same arc are congruent • The angle inscribed in a semicircle is a right angle • The opposite angles of a cyclic quadrilateral are supplementary • A tangent to a circle is perpendicular to the radius at the point of tangency • The tangent segments to a circle, from any external point, are congruent • The sum of the interior angles of an *n*-sided polygon is 180°(*n*-2) (H-1)	
Use properties of circles and polygons to solve design and layout problems (H-2)	
	11A.M.1. Solve problems that involve the application of rates. [CN, PS, R, T]
	11A.M.2. Solve problems that involve scale diagrams, using proportional reasoning. [CN, PS, R, T, V]
	11A.M.3. Demonstrate an understanding of the relationships among scale factors, areas, surface areas and volumes of similar 2-D shapes and 3-D objects. [C, CN, PS, R, T, V]
	11A.G.1. Derive proofs that involve the properties of angles and triangles. [CN, R, T, V]

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	11A.G.2. Solve problems that involve the properties of angles and triangles. [CN, PS, T, V]
Apply the sine and cosine laws, excluding the ambiguous case, to solve problems (I-3) Note: Ambiguous case not included here.	11A.G.3. Solve problems that involve the cosine law and the sine law, including the ambiguous case. [CN, PS, R, T]
	11A.L.1. Analyze and prove conjectures, using inductive and deductive reasoning, to solve problems. [C, CN, PS, R, T]
	11A.L.2. Analyze puzzles and games that involve spatial reasoning, using problem-solving strategies. [CN, PS, R, T, V]
	11A.S.1. Demonstrate an understanding of normal distribution, including: • standard deviation • z-scores. [CN, PS, T, V]
	11A.S.2. Interpret statistical data, using: • confidence intervals • confidence levels • margin of error. [C, CN, R, T]
	11A.RP.1. Research and give a presentation on a historical event or an area of interest that involves mathematics. [C, CN, ME, PS, R, T, V]

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