

Grade 12 Applied Mathematics (2000)	Applied Mathematics (2009)
Model and solve problems, including those solved previously, using technology to perform matrix operations of addition, subtraction, and scalar multiplication as required (A-1)	
Model and solve consumer and network problems using technology to perform matrix multiplication as required (A-2)	
Use appropriate terminology to describe: <ul style="list-style-type: none"> • Vectors, i.e., magnitude, direction; and • Scalar quantities, i.e., magnitude (B-1)	
Determine the magnitude and direction of a resultant vector, using triangle or parallelogram methods (B-2)	
Model and solve problems in 2-D using vector diagrams and technology (B-3)	
Design or use a financial template to allow users to input their own variables (C-1)	
Analyze the costs and benefits of renting or buying an increasing asset (e.g., home) under different circumstances (C-2)	12A.FM.2. Analyze costs and benefits of renting, leasing and buying. [CN, PS, R, T]
Analyze the costs and benefits of leasing or buying a decreasing asset (e.g., vehicle, computer) under different circumstances (C-3)	12A.FM.2. Analyze costs and benefits of renting, leasing and buying. [CN, PS, R, T]
Analyze an investment portfolio applying such concepts as interest rate, rate of return and total return (C-4)	12A.FM.1. Solve problems that involve compound interest in financial decision making. [C, CN, PS, T, V] 12A.FM.3. Analyze an investment portfolio in terms of: <ul style="list-style-type: none"> • interest rate • rate of return • total return. [ME, PS, R, T]
Solve pathway problems, interpreting and applying any constraints (D-1)	
Use the fundamental counting principle to solve problems (D-2)	12A.P.4. Solve problems that involve the fundamental counting principle. [PS, R, T, V]
Construct and interpret a sample space for two or three events (D-3)	
Solve problems using the probabilities of mutually exclusive and complementary events (D-4)	12A.P.2. Solve problems that involve the probability of mutually exclusive and non-mutually exclusive events. [CN, PS, R, T, V]
Classify events as independent or dependent and solve related probability problems (D-5)	12A.P.3. Solve problems that involve the probability of independent and dependent events. [CN, PS, R, T]
Find the population standard deviation of a data set using technology (E-1)	
Use z-scores and z-score tables to solve problems (E-2)	

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Use the normal distribution and the normal approximation to the binomial distribution to solve problems involving confidence intervals for large samples (E-3)	
Use dimensions and unit prices to solve problems involving perimeter, area, and volume (F-1)	12A.D.1. Analyze objects, shapes and processes to solve cost and design problems. [C, CN, ME, PS, R, T, V]
Solve problems involving estimation and costing for objects, shapes, or processes when a design is given (F-2)	12A.D.1. Analyze objects, shapes and processes to solve cost and design problems. [C, CN, ME, PS, R, T, V]
Design an object, shape, layout, or process within a specified budget (F-3)	12A.D.1. Analyze objects, shapes and processes to solve cost and design problems. [C, CN, ME, PS, R, T, V]
Use simplified models to estimate the solutions to complex measurement problems (F-4)	12A.D.1. Analyze objects, shapes and processes to solve cost and design problems. [C, CN, ME, PS, R, T, V]
Describe periodic events, including those represented by sinusoidal curves, using the terms amplitude, period, maximum, and minimum values, vertical and horizontal shift (G-1)	12A.R.3. Represent data, using sinusoidal functions, to solve problems. [C, CN, PS, T, V]
Collect sinusoidal data; graph the data using technology and represent the data in the form: $y = a \sin(bx - c) + d$ (G-2)	12A.R.3. Represent data, using sinusoidal functions, to solve problems. [C, CN, PS, T, V]
Use best fit sinusoidal equations, and their associated graphs, to make predictions (interpolations and extrapolations) (G-3)	12A.R.3. Represent data, using sinusoidal functions, to solve problems. [C, CN, PS, T, V]
Use technology to generate and graph sequences that model real-life phenomena (H-1)	
Use technology to construct a fractal pattern by repeatedly applying a procedure to a geometric figure (H-2)	
Use the concept of self-similarity to compare and/or predict the perimeters, areas, and volumes of fractal patterns (H-3)	
	12A.L.1. Analyze puzzles and games that involve numerical and logical reasoning, using problem-solving strategies. [CN, ME, PS, R, T]
	12A.L.2. Solve problems that involve the application of set theory. [CN, PS, R, T, V]
	12A.L.3. Solve problems that involve conditional statements. [C, CN, PS, R, T]
	12A.RP.1. Research and give a presentation on a current event or an area of interest that involves mathematics. [C, CN, ME, PS, R, T, V]

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	12A.R.1. Represent data, using polynomial functions (of degree ≤ 3), to solve problems. [C, CN, PS, T, V]
	12A.R.2. Represent data, using exponential and logarithmic functions, to solve problems. [C, CN, PS, T, V]
	12A.P.1. Interpret and assess the validity of odds and probability statements. [C, CN, ME, T]
	12A.P.5. Solve problems that involve permutations. [ME, PS, R, T, V]
	12A.P.6. Solve problems that involve combinations. [ME, PS, R, T, V]