Precalculus Semester 2 Final Assessment Blueprint

Year: 2024-2025 **Method of Delivery:** Online
Subject: Math **Administration Window:** May 12-22

Resources

Pre-calculus Curriculum Map

Standards At-A Glance

Standard	Number of Items	Standard Description
MA.9-12.A2.A-SSE.B.4	2	Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems.
MA.9-12.A2.F-BF.A.2	1	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
MA.9-12.A2.F-TF.A.1	3	Understand radian measure of an angle as the length of the arc on any circle subtended by the angle, measured in units of the circle's radius.
MA.9-12.A2.F-TF.A.2	3	Explain how the unit circle in the coordinate plane enables the extension of sine and cosine functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
MA.9-12.A2.F-TF.B.5	6	Create and interpret sine, cosine and tangent functions that model periodic phenomena with specified amplitude, frequency, and midline.
MA.9-12.A2.F-TF.C.8	2	Use the Pythagorean identity sin 2 (θ) cos 2 (θ) = 1 and the quadrant of the angle θ to find sin(θ), cos(θ), or tan(θ) given sin(θ) or cos(θ).
MA.9-12.P.A-APR.C.5	1	Know and apply the Binomial Theorem for the expansion of (x y)n in powers of x and y for a positive integer n , where x and y are any numbers, with coefficients determined for example by Pascal's Triangle. The Binomial Theorem can be proved by mathematical induction or by a combinatorial argument.
MA.9-12.P.F-TF.A.4	1	Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.
MA.9-12.P.F-TF.B.7	2	Use inverse functions to solve trigonometric equations utilizing real world context; evaluate the solution and interpret them in terms of context.
MA.9-12.P.F-TF.C.9	3	Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.
MA.9-12.P.G-SRT.D.10	3	Prove the Laws of Sines and Cosines and use them to solve problems.
MA.9-12.P.G-SRT.D.11	1	Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).
MA.9-12.P.G-SRT.D.9	1	Derive the formula A = ½ a b sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
MA.9-12.P.N-CN.B.4	1	Represent complex numbers on the complex plane in rectangular and polar form, including real and imaginary numbers, and explain why the rectangular and polar forms of a given complex number represent the same number.
MA.9-12.P.N-CN.B.5	1	Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation.
MA.9-12.P.N-VM.A.1	2	Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes.
MA.9-12.P.N-VM.A.2	1	Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.
MA.9-12.P.N-VM.A.3	1	Solve problems involving velocity and other quantities that can be represented by vectors.
MA.9-12.P.N-VM.B.4	1	Add and subtract vectors.
MA.9-12.RFR.ISS.4	1	Find the sums of finite or infinite series, if they exist.
MA.9-12.RT.EPE.1	3	Graph polar equations.
MA.9-12.RT.EPE.b	1	Determine equivalent polar representations for a given point.
MA.9-12.RT.RTS.3	1	Solve trigonometric equations.
MAT182.11.0	1	Find nth roots of complex numbers. (VIII)
MAT182.6.0	1	Determine the graph and period of a trigonometric function. (III)
MAT182.8.0	1	Verify trigonometric identities. (V)

**Some items may be tagged to more than one standard.*

Depth of Knowledge

DOK	Number of Items
Level 1: Recall	17
Level 2: Skill/Concept	20
Level 3: Strategic Thinking	3

Item Types Included

Type	Number of Items	Description
MC	40	Multiple Choice - Select one answer