WAYNE LOCAL SCHOOLS PRECALCULUS PACING GUIDE QUARTER 4

UNIT	STANDARDS	LESSON DAYS	TEXTBOOK CORRELATION
6	G-SRT.9. Derive the formula A = 1/2 ab sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side. G-SRT.10. (+) Prove the Laws of Sines and Cosines and use them to solve problems. G-SRT.11. (+) 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).	3	Chapter 6 Blitzer (6.1, 6.2)
7	N.VM.1(+) 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 (e.g., v, |v|, ||v||, v). N.VM.2 (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point. N.VM.3 (+) Solve problems involving velocity and other quantities that can be represented by vectors. N.VM.4 (+) Add and subtract vectors. a. Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes. N.VM.4 (+) Add and subtract vectors. b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. N.VM.4 (+) Add and subtract vectors. c. Understand vector subtraction v – w as v + (–w), where –w is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise. N.VM.5 (+) Multiply a vector by a scalar. a. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as c(vx, vy) = (cvx, cvy). N.VM.5 (+) Multiply a vector by a scalar. b. Compute the magnitude of a scalar multiple cv using ||cv|| = |c|v. Compute the direction of cv knowing that when |c|v ≠ 0, the direction of cv is either along v (for c > 0) or against v (for c < 0).	20	Chapter 6 Blitzer (6.6, 6.7) Chapter 8 Blitzer

	N.VM.6 (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network. N.VM.7 (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. N.VM.8 (+) Add, subtract, and multiply matrices of appropriate dimensions. N.VM.9 (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties. N.VM.10 (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse. N.VM.11 (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.		
8	S.MD1 (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions. S.MD.2 (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution. S.MD.3 (+) Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. S.MD.4 (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. S.MD.5 (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. a. Find the expected payoff for a game of chance. For example, find the expected winnings from a state lottery ticket or a game at a fast food restaurant. S.MD.5 (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. b. Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.	23	Blitzer 10.7

UNITS: **6 Additional Topics in Analytic Trigonometry**
7 Vectors and Matrices
8 Data and Probability

MATHEMATICAL PRACTICES

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

I CAN STATEMENTS:

- I can solve oblique triangles by using the Law of Sines or the Law of Cosines.
- I can find areas of oblique triangles
- I can perform operations with matrices.
- I can use matrices to represent a system of linear equations.
- I can use matrices to represent data.
- I can use matrices to manipulate data.
- I can use matrices in real life applications.
- I can perform algebraic operations with matrices.
- I can multiply matrices.
- I can use the properties of matrix multiplication.
- I can understand that the multiplication of square matrices is not commutative.
- I can understand that multiplication of square matrices works with the associative property.
- I can understand that the multiplication of square matrices works with the distributive property.
- I can understand that vector quantities have both magnitude and direction.

- I can represent vector quantities by directed line segments.
- I can use appropriate symbols for vectors and their magnitude.
- I can find the components of a vector by subtraction.
- I can add vectors end-to-end.
- I can add vectors component-wise.
- I can add vectors by the parallelogram rule.
- I can determine the magnitude and direction of the sum of two vectors.
- I can understand vector subtraction.
- I can multiply a vector by a scalar.
- I can represent scalar multiplication graphically.
- I can perform scalar multiplication component-wise.
- I can compute the magnitude of a scalar multiple.
- I can add, subtract, and multiply matrices.
- I can find the determinant of a matrix.
- I can represent the sum of a series using sigma notation.
- I can find the nth term of arithmetic series and sequences.
- I can find the nth term of geometric series and sequences.
- I can use Pascal's Triangle and/or the Binomial Theorem to write binomial expansion.
- I can use a power series to represent a rational function.
- I can create and interpret a data distribution.