

MATH HONORS 2: Second Semester Exam Skills

Powers and Radicals

- Simplifying expressions involving powers using laws of exponents
- Solving exponential equations by expressing each power with a common base
- Adding, subtracting, multiplying, and simplifying radical expressions using laws of radicals
- Dividing radical expressions by using the conjugate to rationalize the denominator
- Solving radical equations and inequalities and checking for extraneous solutions

Exponentials and Logarithms

- Adding, subtracting, and simplifying expressions using laws of logarithms
- Stating the domain and range of exponential and logarithmic functions
- Graphing exponential and logarithmic functions
- Solving exponential and logarithmic equations and inequalities

Triangle Trigonometry and Circle Trigonometry

- Solving right triangles using trigonometric functions
- Solving non-right triangles (including the ambiguous case) using the laws of sines and cosines
- Finding the areas of triangles given the measures of two sides and the angle between them
- Converting between degree measure and radian measure and finding co-terminal angles
- Finding reference angles by knowing trigonometric ratios of special angles
- Evaluating composite trigonometric functions

Trigonometric Graphs, Identities, and Equations

- Graphing trigonometric functions and their inverse functions
- Determining the domain, range, amplitude, period, and shifts in a given trigonometric graph
- Using fundamental trigonometric identities to formally prove trigonometric identities
- Simplifying expressions using the sum, difference, and double-angle identities
- Solving trigonometric equations for all solutions within a given domain

Probability

- Using the Fundamental Counting Principle
- Using Venn diagrams to find probabilities of combined events involving AND, OR, and NOT
- Determining whether events are mutually exclusive or independent
- Using tree diagrams to find probabilities of combined events with or without replacement
- Calculating conditional probability

Matrices

- Adding, subtracting, and multiplying matrices, if the dimensions are compatible
- Finding determinants and inverses of matrices, if they exist
- Solving systems of equations using matrix equations or row-reduction of augmented matrices
- Using the determinant to determine if an inverse exists and to classify systems of equations