

MATH II - Mathematical Problem Solving II

MATH II focuses on algebraic and graphical problem solving skills with emphasis on understanding, interpreting, and analyzing functions such as linear, quadratic, rational, radical, exponential, logarithmic, and trigonometric functions. This course helps diverse learners master these mathematical concepts and apply them to solve real world problems.

COURSE LEARNING OUTCOMES

Students will be able to:

1. Develop a function sense by understanding and being able to use definitions of and notations for function, domain, and range.
2. Set up and solve a system of equations and inequalities using different methods for given various word problems.
3. Understand specific functions (linear, quadratic, rational, radical, exponential, and logarithmic, trigonometric functions) and their properties verbally, visually, numerically, and symbolically. Be able to navigate between these five perspectives for these functions.
4. Given a function or functions, understand ways to create a new function (via addition, composition, and transformations) and analyze properties of the new function.
5. Understand when a function has an inverse and be able to identify if a specific function, described numerically or visually, has an inverse function.
6. Given a linear, exponential, or logarithmic, function, determine its inverse function.
7. Apply and model real world situations using linear, quadratic, rational, radical, exponential, or logarithmic, trigonometric functions. Interpret and make predictions from a model.
8. Find a pattern linking the ratio of sides of a triangle with the angles and hence understand the concepts of sine, cosine and tangent ratios of angles.
9. Develop mathematical intuition and a relevant base of mathematical knowledge.
10. Gain experiences that connect learning with real world applications.