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**Public**
How can we help solve problems for this group?

serve to improve the life of

creates products to sell to the

Pay money for

**Successful Start-Up Businesses**
How do we tranform a technology-driven product into a successful company?

either become or are acquired by

**Large Corporations**
How do we tranform a technology driven product into a successful company?

drive new products offered by

**Commercially Viable Technology**
How can we translate our creations into useful products and services for other people?

drive new products offered by

contributes to the effective management and long terms productivity of

**Financial Education and Business Acumen**
How do we effectively manage our financial assets in the service of some business goal?

drive the creation of many product and services that become

**Technical Solutions to Real-World Problems**
How can we use our ability to problem solve and our technical training to address the formidable problems of our world at this time?

results in

pay for technical staff who conduct research and development to find new

is one tool that adds to

**Engineering**
How can we create the most effective and cost efficientproducts and services for other people?

provide special intuition guiding the development of

**Physical Sciences**
What are the properties of the physical world we live in?
What laws govern the dynamics of the physical world and how do we describe these laws?

**Financial Mathematics**
What does mathematics tell us about the best way to manage, utilize and understand financial products and services?

provides the fundamental quantitative tools used to create and analyze mathematical models in the

allows for effective synthesis and analysis of models in

**Applied Mathematics**
How can mathematics be used to solve problems and improve our insight in science, engineering, business and academia?

drives the development of

includes many of the powerful tools for large data manipulation problems and is the one of the two major pillar of

Provides the mathematical formulation of change and is one of the two major pillar of

Provides tools that allows scientists to categorize and predict dynamic systems quite accurately

**Numerical Linear Algebra**
What techniques do we have to compute efficiently and accurately using large data sets?

has the main tools used to maximize and minimize fundamental quantitative results that arise in

allows scientists to be use computers to do calculation to solve real world problems in

contains powerful tool for modeling nondeterministic events that are studied in

**Mathematical Analysis**
What are the rigourous foundations for the study of functions and how are these related to the real number line?

**Numerical Optimization**
What techniques do we have to calculate optimal solutions to quantitative problems?

**Numerical Analysis**
How can we use computers to perform meaningful mathematical calculations?

**Probability and Statistics**
How can data be used to drive effective decision making and improve our understanding of the world in which we live?

**Numerical Solutions to Differential Equations**
How can we evaluate elementary functions?

enables the precise and accurate proofs of all important results in

improves the treatment of linear programming, constrained optimiation and integer programming as a part of

formalizes the observations of computer scientists who create algorithms in

is used to create the theorhetic foundations of

can be used to understand and prove theorems from

**University Education in Applied Mathematics**
How do we train future engineers, scientists, entreprenuers, and business professionals to create technical solutions to tomorrow's major problems?

establishes rigorous results for the solutions of

helps prepare you for a

**Fundamentals of Applied Mathematics**
How can we use our ability to problem solve and our technical training to address formidable problems of our world at this time?

is the theoretical and rigorous study of change that forms the first pillar of the

represents rigorous and practical study of solutions of linear equations and forms the second pillar of the

**Calculus**
How do we establish a rigorous mathematical foundation for ordinary and partial differentiation and integration?

create a rigorous and practical method to model dynamics observed in many real-world phenomenon that composes the third pillar of the

**Applied Linear Algebra**
How does the study of matrices improve numerical computations in applied mathematics?

compose the study of

**Differential Equations**
How do can derivatives and algebraic euqations be used to describe real-world phenomenon in dynamic systems?

combine to form the field of

lays the rigorous theoretical foundation for

can be used as tools to approximate soltuions for

**Multivariable Calculus**
How do we differentiate, integrate and approximate multivariable functions?

**Single-Variable Sequences and Series**
How can we approximate single-variable elementary functions using polynomials?

**Single-Variable Integral Calculus**
What is the inverse of the ordinary derivative operator and how does this inverse relate to the area under a curve?

**Single-Variable Differential Calculus**
What are ordinary derivatives and how can these be used as tools to model change?

make up the study of

**Partial Differential Equations**
How can equations involving partial derivatives be used to model phenomena in our world and how can we solve such equations?

**Ordinary Differential Equations**
How can equations involving ordinary derivatives be used to model phenomena in our world and how can we solve such equations?

**Eigenvalue Problem**
What are the "natural" frequencies associated with a system of coupled components?

**Least-Squares Problems**
What can we do if a linear system doesn't have an exact solution?

**Linear-Systems Problems**
What are linear systems and how do we solve them?

**Matrix-Vector Multiplication Problems**
What are matrices and vectors and how do we multiply these?

will support your study of

**Math 1ABCD**
What is Differentail Calculus and how does it relate to my life?

familiarizes you with classic techniques for solving

**Math 2A**
What are differential equations and how can they be used to model the word around me?

provides you with an excellent opportunity to begin your study of

**Math 2B**
What are Linear Systems, what are their properties, and how do the solutions to linear systems improve my ability to model the world around me?