SUBJECTS AND TOPICS COVERED
**MATHEMATICS**

- Basic Arithmetic
- Basic Geometry
- Basic Algebra

**ADVANCED ARITHMETIC**
- Complex Numbers
- Prime Numbers
- Number Theory
- Irrational Numbers
- Quotient and Remainder

**ADVANCED GEOMETRY**
- Geometric Proofs
- Projection
- Parametric Equations
- Polar Coordinates
- Modeling
- Planes
- Congruence/Similarity
- Conic Sections
- Geometric Transformations
- Vectors (Geometric)
- Trigonometric Ratio

**CALCULUS**
- Rate of Change
- Partial Derivatives
- Limits
- Related Rates
- Differential Equations
- Implicit Differentiation
- Integrals
- Slope of a Tangent Line
- Derivatives
- Continuity
- Optimization
- Fundamental Theorem of Calculus
- Vector (Calculus)
- Series

**LINEAR ALGEBRA**
- Gauss Elimination
- Dot product/Cross Product
- Vectors (Algebraic)
- Orthogonality
- Matrices
- Eigen Decomposition
- Determinant
- Norm of a Vector
- Vectorial Space
### FUNCTIONS
- Discrete Functions/Sequences
- Quadratic Functions
- Piecewise Functions
- Rational Functions
- Even/Odd Functions
- Exponential/Logarithmic Functions
- Trigonometric Functions
- Polynomial Functions
- Function Combination/Composition

### EQUATIONS
- Rational Equations
- Quadratic Equations
- Polynomial Equations
- Trigonometric Equations and Identities
- System of Linear Equations
- Exponential Equations

### MONEY/FINANCIAL MATHEMATICS
- Annuities and Perpetuities
- Profit and Loss
- Compound Interest Loans and Investments
- Reducing Balance Loans

### PROBABILITY
- Expectation and Variance
- Discrete Random Variable
- Continuous Random Variable
- Pascal's Triangle
- Conditional Probability
- Pascal's Triangle
- Conditional Probability
- Two-Way Tables and Venn Diagrams
- Bayes' Rule
- Counting
- Sets and Events
- Permutations and Combinations

### SCIENTIFIC APPLICATION
- Phase Shift
- Exponential Growth/Decay
- Scientific Notation

### STATISTICS
- Data Management
- Time Series
- Data Display
- Hypothesis Testing
- Data Types
- Measures of Variability
- Measures of Central Tendency
- Sampling Estimation
- Line of Best Fit/Regression
- Frequency Distribution
BIOLOGY

Evolution (Species)
Animal Biology
Biochemistry
Biology Labs
Cellular Biology
Ecology/Ecosystems
Genetics
Human Biology
Metabolic Processes
Microbiology
Molecular Biology
Plant Biology
Population Dynamics
Taxonomy/Classification

HEALTH SCIENCES

Biotechnology
Kinesiology
Medical Technologies
Nutritional Science
Pathogens/Diseases
Physiology
Science/Public Health Issues

PHYSICS

Electric Circuits
Electromagnetism and Electrostatics
Energy/Work/Power
Fluid Mechanics
Forces and Newton's Laws/Dynamics
Geometrical Optics
Gravitation
Kinematics
Nuclear Fission and Fusion
Physics Labs
Quantum Mechanics/Special Relativity
Thermodynamics
Waves/Sound/Light

PAPER: Equity in Action
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SPANISH
Spanish as a second language
Spanish Essay Writing
Spanish Literature
Spanish Written Comprehension

ARABIC
Arabic as a second language
Arabic Essay Writing

COMPUTER SCIENCE
Algorithms
c++ / c / c# / objective c
Hardware
Java
Javascript
Operating Systems
PHP
Programming Basics
Python
Web Development html css

PHYSICAL SCIENCES
Astronomy/Space Exploration
Environmental Science
Geology/Earth History
Oceanography
Planetary Science

SOCIOLOGY/ANTHROPOLOGY

PSYCHOLOGY

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