MATH 170
Ideas in Mathematics

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           Math 170 Ideas in Mathematics
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Math 170 introduces the students to basic concepts of set theory, basic logic, numeration system, basic number theory, graph theory and scheduling.

Chapter 1
The Basic Concept of Set Theory
a)   Symbols and Terminology
b)   Venn Diagrams and Subsets
c)   Set Operations and Cartesian Products
d)   Surveys and Cardinal Numbers
e)   Infinite sets and Their Cardinalities

Chapter 3
Introduction to Logic
a)   Statements and Quantifiers
b)   Truth Tables and Equivalent Statements
c)   The conditional and Circuits
d)   The conditional and Related Statements
e)   Analyzing Arguments with Euler Diagrams
f)   Analyzing Arguments with Truth Tables

Chapter 5
Numeration Systems
a)   Historical Numeration Systems
b)   More Historical Numeration Systems
c)   Arithmetic in the Hindu-Arabic System
d)   Conversion between Number Basis

Chapter 7
Number Theory
a)   Prime and Composite numbers
b)   Large Primes
c)   GCF and LCM
d)   Fibonacci Sequence and the Golden Ratio

Chapter 9
The Real numbers and Their Representation
a) Real Numbers, order and Absolute Value
b) Operations, Properties, and Application of Real Numbers
c) Rational numbers and Decimal Representations
d) Irrational numbers and Decimal Representation
e) Applications of Decimal and Percent's

Chapter 11
The Mathematics of Getting Around

Chapter 12
The Mathematics of Touring

Chapter 13
The Mathematics of Networks

Chapter 14
The Mathematics of Scheduling

Chapter 15
The Mathematics of Symmetry

Chapter 16
Fractal Geometry

Chapter 17
Fibonacci Numbers and the Golden Ratio