

SYMBOLS

$=$	equal to	\sim	similarly
\neq	not equal to	Δ	symmetric difference
$<$	less than	\mathbb{N}	natural numbers
\leq	less than or equal to	\mathbb{W}	whole numbers
$>$	greater than	\mathbb{Z}	integers
\geq	greater than or equal to	\mathbb{R}	real numbers
\approx	equivalent to	\triangle	triangle
\cup	union	\sphericalangle	angle
\cap	intersection	\perp	perpendicular to
\mathbb{U}	universal Set	\parallel	parallel to
\in	belongs to	\Rightarrow	implies
\notin	does not belong to	\therefore	therefore
\subset	proper subset of	\because	since (or) because
\subseteq	subset of or is contained in	$ $	absolute value
$\not\subset$	not a proper subset of	\simeq	approximately equal to
$\not\subseteq$	not a subset of or is not contained in	$ (\text{or}):$	such that
$A' \text{ (or) } A^c$	complement of A	$\equiv \text{ (or) } \cong$	congruent
$\emptyset \text{ (or) } \{ \}$	empty set or null set or void set	\equiv	identically equal to
$n(A)$	number of elements in the set A	π	pi
$P(A)$	power set of A	\pm	plus or minus
Σ	summation		

Captions used
in this Textbook

எண்ணென்ப ஏனை எழுத்தென்ப இவ்விரண்டும்
கண்ணென்ப வாழும் உயிர்க்கு - குறள் 392

Numbers and letters, they are known as
eyes to humans. - Kural 392

Learning Outcomes

To transform the class-room processes into learning centric with a set of bench marks



Note

Additional inputs on the content which require student to think and comprehend the concepts are given



Thinking Corner

To kindle the inquisitiveness of students in learning mathematics. To make the students to have a diverse thinking



Progress Check

Self evaluation of the learner's progress



Activity

To encourage students to involve in activities to learn mathematics



Exercise

To evaluate the learners' in understanding the content



Multiple Choice Questions

To provide additional assessment items on the content



Unit Exercise

Interlinking various concepts in each unit, problems are prescribed for the students to attempt and solve them



Points to Remember

To recall the points learnt in the topic



ICT Corner

To encourage learner's understanding of content through application of technology



CONTENTS

CHAPTER	TITLE	PAGE No.	MONTH
1	Relations and Functions	1-35	
1.1	Introduction	1	June
1.2	Ordered Pair	2	
1.3	Cartesian Product	2	
1.4	Relations	6	
1.5	Functions	10	
1.6	Representation of Functions	15	
1.7	Types of Functions	17	
1.8	Special Cases of Functions	22	
1.9	Composition of Functions	26	
1.10	Identifying the Graphs of Linear, Quadratic, Cubic and Reciprocal Functions	29	
2	Numbers and Sequences	36-84	
2.1	Introduction	37	June
2.2	Euclid's Division Lemma	37	
2.3	Euclid's Division Algorithm	39	
2.4	Fundamental Theorem of Arithmetic	43	
2.5	Modular Arithmetic	46	
2.6	Sequences	52	
2.7	Arithmetic Progression	55	July
2.8	Series	62	
2.9	Geometric Progression	67	
2.10	Sum to n terms of a Geometric Progression	73	
2.11	Special Series	76	
3	Algebra	85-160	
3.1	Introduction	85	July
3.2	Simultaneous Linear Equations in Three Variables	87	
3.3	GCD and LCM of Polynomials	93	
3.4	Rational Expressions	98	August
3.5	Square Root of Polynomials	103	
3.6	Quadratic Equations	106	September
3.7	Graph of Variations	123	
3.8	Quadratic Graphs	130	
3.9	Matrices	137	October

4	Geometry	161-202	
4.1	Introduction	161	July
4.2	Similarity	162	
4.3	Thales Theorem and Angle Bisector Theorem	171	August
4.4	Pythagoras Theorem	183	October
4.5	Circles and Tangents	188	
4.6	Concurrency Theorems	195	
5	Coordinate Geometry	203-238	
5.1	Introduction	203	August
5.2	Area of a Triangle	205	
5.3	Area of a Quadrilateral	207	
5.4	Inclination of a Line	212	
5.5	Straight Line	221	
5.6	General Form of a Straight Line	230	
6	Trigonometry	239-268	
6.1	Introduction	239	September
6.2	Trigonometric Identities	242	
6.3	Heights and Distances	250	November
7	Mensuration	269-300	
7.1	Introduction	269	November
7.2	Surface Area	270	
7.3	Volume	282	
7.4	Volume and Surface Area of Combined Solids	290	
7.5	Conversion of Solids from one Shape to another with no change in Volume	295	
8	Statistics and Probability	301-333	
8.1	Introduction	301	December
8.2	Measures of Dispersion	303	
8.3	Coefficient of Variation	314	
8.4	Probability	316	
8.5	Algebra of Events	323	
8.6	Addition Theorem of Probability	325	
	Answers	334-342	
	Mathematical Terms	343-344	



E-book



Evaluation