MATHEMATICS

STANDARD

X

PART - 2



Government of Kerala

DEPARTMENT OF EDUCATION

Prepared by
State Council of Educational Research and Training (SCERT) KERALA
2011



Jana-gana-mana adhinayaka, jaya he
Bharatha-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchala-Jaladhi-taranga
Tava subha name jage,
Tava subha asisa mage,
Gahe tava jaya gatha.
Jana-gana-mangala-dayaka jaya he
Bharatha-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!

PLEDGE

India is my country. All Indians are my brothers and sisters.

I love my country, and I am proud of its rich and varied heritage. I shall always strive to be worthy of it.

I shall give respect to my parents, teachers and all elders and treat everyone with courtesy.

I pledge my devotion to my country and my people. In their well-being and prosperity alone lies my happiness.

Prepared by:

State Council of Educational Research and Training (SCERT)

Poojappura, Thiruvananthapuram 695012, Kerala

Website : www.scertkerala.gov.in e-mail : scertkerala@asianetindia.com

Phone : 0471 - 2341883, Fax : 0471 - 2341869

First Edition : 2011
Typesetting : SCERT
Lay out : SCERT
Cover design : SCERT

Printed at : KBPS, Kakkanad, Kochi © Department of Education, Government of Kerala Dear Children,

In farms and factories,
Up the sky and in the mind,
Mathematics blooms.
Roots deep in history;
Numbers, Equations,
Geometrical Shapes;
Forking branches.
To know a little of all this
A small book.
Fruit of knowledge - a mellow mind
Right in thought, True in word
With regards,

Prof. M. A. Khader Director SCERT

Textbook Development Committee

Mathematics X

Chairman

Dr. Krishnan, E

Head, Dept. of Mathematics (Rtd.), University College, Thiruvananthapuram

Members

Anilkumar. M. K

HSA., S.K.M.J, HSS., Kalpetta,

Wayanad

Prabhakaran Nair, P. P. HSA (Rtd), Palaora H.S.,

Kozhikkode

Ramanujam, R

HSST., M.N.K.M Govt. HSS.,

Pulapetta, Palakkad

Unnikrishnan. M. V

Lecturer in Mathematics,

Crescent BEd. College, Kannur

Vijayakumaran, T. K HSA., Govt. HSS.,

Kasaragod

Dr. Gokuldasan Pillai. C Head, Curriculum Department,

SCERT., Thiruvananthapuram

Prakasan, T. P.

HSA., Govt. HSS.,

Vazhakkad, Malappuram

Rameshan, N. K

HSA., Rajiv Gandhi Memorial

High School, Mokeri, Kannur

Vasu. K. G

AEO (Rtd.)., Kuttippuram,

Malappuram

Narayanan. V HSST., Govt. HSS., Edappal, Malappuram

Dr. Radhakrishnan Chettiar. S

Professor (Rtd.), University College,

Thiruvananthapuram

Dr. Sabuji Varughese

HSST., Govt. HSS., Thottakkonam,

Pandalam, Pathanmathitta

Venugopal. V

HSA., MNKM Govt. HSS.,

Pulapetta, Palakkad

Artist

Dhanesan, M. V

HSA., MVGHSS.,

Karivallur, Kannur

Expert Committee

Dr. Thrivikraman, T

Head, Department of Mathematics (Rtd.),

Cochin Univeristy of Science & Technology,

Cochin

Dr. Ramachandran, P. T.

Head., Department of Mathematics,

University of Calicut

Narayanan, C. P

Member,

Kerala State Planning Board

Dr. Rajan. A. R

Professor, Department of Mathematics,

University of Kerala

Academic Co-ordinator

Dr. LidsonRaj. J

Research Officer, SCERT., Thiruvananthpauram

English Translation

Dr. Krishnan. E

Head, Dept. of mathematics (Rtd.),

University College, Thiruvananthapuram

Dr. Sarachandran, T. G. Associate Professor,

Department of Mathematics,

University College, Thiruvananthapuram

Dr. Sunny Lukose

Associate Professor & Head,

Department of Mathematics,

Govt. College for Women, Thiruvananthapuram

Dr.Radhakrishnan Chettiar. S

Professor (Rtd.), University College,

Thiruvananthapuram

Dr. Shirly Valanthara

Associate Professor,

Department of Mathematics,

Govt. College for Women. Thiruvananthapuram

Venugopal. C

Assistant Professor

Govt. College of Teacher Education,

Thycadu, Thiruvananthapuram



CONTENTS

CHAPTER		PAGE
7	Mathematics of chance	137
8	Tangents	143
9.	Polynomials	165
10.	Geometry and Algebra	175
11.	Statistics	191

CONSTITUTION OF INDIA Part IV A

FUNDAMENTAL DUTIES OF CITIZENS

ARTICLE 51 A

Fundamental Duties- It shall be the duty of every citizen of India:

- to abide by the Constitution and respect its ideals and Institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practice derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wildlife and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- to safeguard public property and to abjure violence;
- to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievements;
- (k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between age of six and fourteen years.