| BYOM $7^{\text {th }}$ grade Syllabus |  |  |  |
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| Lesson \# |  | Topic | Hours |
|  |  | Unit 1. Building of a mathematical theory | 9 |
| 1-3 | 1 | Mathematical model of real problem | 1 |
|  | 2 | Basic ingredients for a mathematical model | 1 |
|  | 3 | Basic ingredients for a mathematical model | 1 |
| 4-9 | 4 | Methods of building mathematical theory | 1 |
|  | 5 | Some methods of mathematical proof | 1 |
|  | 6 | Some methods of mathematical proof | 1 |
|  | 7 | Logical conclusion. Venn Diagram | 1 |
|  | 8 | Logical conclusion | 1 |
|  | 9 | Logical mistakes | 1 |
|  |  | Unit 2. Divisibility | 17 |
| 10-17 | 10 | Divisibility and its properties | 1 |
|  | 11 | Divisibility and its properties | 1 |
|  | 12 | Prime numbers | 1 |
|  | 13 | Prime numbers | 1 |
|  | 14 | Division and remainders | 1 |
|  | 15 | Division and remainders | 1 |
|  | 16 | Euclid's Algorithm | 1 |
|  | 17 | Euclid's Algorithm | 1 |
| 18-26 | 18 | Divisibility of integers | 1 |
|  | 19 | Classification of integers by modulo | 1 |
|  | 20 | Classification of integers by modulo | 1 |
|  | 21 | Modulo Arithmetic | 1 |
|  | 22 | Modulo Arithmetic | 1 |
|  | 23 | Modulo Arithmetic | 1 |
|  |  |  |  |
|  | 24 | Solving problems with modulo | 1 |
|  | 25 | Solving problems with modulo | 1 |
|  |  | Unit 3. Algebraic expressions | 7 |
| 27-29 | 26 | Rational numbers | 1 |
|  | 27 | Arithmetic operations and equivalent manipulations | 1 |
|  | 28 | Arithmetic operations and equivalent manipulations | 1 |
| 30-33 | 29 | Manipulating algebraic sums | 1 |
|  | 30 | Manipulating algebraic sums | 1 |
|  | 31 | Manipulating algebraic products | 1 |
|  | 32 | Manipulating algebraic products | 1 |
|  |  | Unit 4. Introduction to Polynomials | 34 |
| 34-37 | 33 | Power with a natural exponent | 1 |
|  | 34 | Properties of power with a natural exponent | 1 |


|  | 35 | Properties of power with a natural exponent | 1 |
| :---: | :---: | :---: | :---: |
|  | 36 | Properties of power with a natural exponent | 1 |
| 38-46 | 37 | Monomials | 1 |
|  | 38 | Monomials | 1 |
|  | 39 | Polynomials | 1 |
|  | 40 | Polynomials | 1 |
|  | 41 | Adding and subtracting polynomials | 1 |
|  | 42 | Adding and subtracting polynomials | 1 |
|  | 43 | Multiplying a monomial by a polynomial | 1 |
|  | 44 | Multiplying polynomials | 1 |
|  | 45 | Multiplying polynomials | 1 |
| 47-54 | 46 | Square of sums and differences | 1 |
|  | 47 | Square of sums and differences | 1 |
|  | 48 | Difference of squares | 1 |
|  | 49 | Difference of squares | 1 |
|  | 50 | Cube of sums and differences | 1 |
|  | 51 | Cube of sums and differences | 1 |
|  | 52 | Sum and difference of two cubes | 1 |
|  | 53 | Sum and difference of two cubes | 1 |
| 55-67 | 54 | Factoring using distributive property | 1 |
|  | 55 | Factoring using distributive property | 1 |
|  | 56 | Grouping methods | 1 |
|  | 57 | Grouping methods | 1 |
|  | 58 | Grouping methods | 1 |
|  | 59 | Special products and Factorization of Polynomials | 1 |
|  | 60 | Special products and Factorization of Polynomials | 1 |
|  | 61 | Special products and Factorization of Polynomials | 1 |
|  | 62 | Factorization methods | 1 |
|  | 63 | Factorization methods | 1 |
|  | 64 | Factorization methods | 1 |
|  | 65 | Solving problems using factorization | 1 |
|  | 66 | Solving problems using factorization | 1 |
|  |  | Unit 5. Introduction to the Functions | 10 |
| 68-72 | 67 | Relations as functions | 1 |
|  | 68 | Relations as functions | 1 |
|  | 69 | Identifying Functions | 1 |
|  | 70 | Identifying Functions | 1 |
|  | 71 | Function and cryptography | 1 |
| 73-77 | 72 | Direct proportion | 1 |
|  | 73 | Linear function and its graph | 1 |
|  | 74 | Linear function and its graph | 1 |
|  | 75 | Piecewise linear function | 1 |


|  | 76 | Piecewise linear function | 1 |
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|  |  | Unit 6. Linear equations and inequalities | 10 |
| 78-83 | 77 | Linear equations | 1 |
|  | 78 | Linear equations | 1 |
|  | 79 | Absolute value equations | 1 |
|  | 80 | Absolute value equations | 1 |
|  | 81 | Solving linear equations in integers | 1 |
|  | 82 | Solving linear equations in integers | 1 |
| 84-87 | 83 | Linear inequalities | 1 |
|  | 84 | Linear inequalities | 1 |
|  | 85 | Absolute value inequalities | 1 |
|  | 86 | Absolute value inequalities | 1 |
|  |  | Unit 7. Combinatorics and Probability | 13 |
| 88-91 | 87 | Counting Variations | 1 |
|  | 88 | Counting Variations | 1 |
|  | 89 | Combinations with repetitions | 1 |
|  | 90 | Combinations with repetitions | 1 |
| 92-95 | 91 | Ways of organizing information | 1 |
|  | 92 | Ways of organizing information | 1 |
|  | 93 | Statistical characteristics | 1 |
|  | 94 | Statistical characteristics | 1 |
| 96-100 | 95 | Intro to probability | 1 |
|  | 96 | Intro to probability | 1 |
|  | 97 | Ways of counting probability | 1 |
|  | 98 | Ways of counting probability | 1 |
|  | 99 | Ways of counting probability | 1 |

