Punjab Education, Curriculum, Training & Assessment Authority

SMART / REDUCED SYLLABUS OF MATHEMATICS GRADE-9

To facilitate students, the content of *Mathematics–9* has been **rationalized and reduced** from the compulsory textbook. This rationalization aims to help students focus on the **key Student Learning Outcomes (SLOs)** that are essential for conceptual understanding and examination preparation, rather than covering the entire textbook. It clearly specifies the **exercises, examples, and questions excluded** from the *Mathematics Grade 9* syllabus for the annual examination-**2027**. **Teachers and students are advised to follow this Smart / Reduced Syllabus** for effective teaching, learning, and exam preparation. The **unit-wise Smart / Reduced Syllabus** is provided below.

Name of the Unit	Skipped / Excluded Content of Mathematics-9
1-Real Numbers	• 1.1 Introduction to Real Numbers; Page # 1 to 3. • 1.3 Applications of Real Numbers in Daily Life; Page # 14 to 15. • 1.3.1 Temperature Conversion, Example # 10; Page # 15 to 16. • 1.3.2 Profit and Loss, Examples # 11 to 14; Page # 16 to 18. • Exercise # 1.3 (Complete); Page # 18 to 19. • **Review Exercise 1: Q # 3, 8 to 10; Page # 20 (Revised)**
2-Logarithms	• 2.4 Laws of Logarithm, Examples # 12 to 15; Page # 30 to 34. • Exercise # 2.4 (Complete); Page # 34 to 35. • **Review Exercise 2: Q # 1 (iv, ix, x), Q # 6 (ii, iii), Q # 7 to 10; Page # 35 to 36 (Revised)**
3-Sets and Functions	• Introduction; Page # 37. • 3.1 Mathematics as the Study of Patterns, Structures and Relationships; Page # 37-39 (before the basic definition of Set). • Example # 5; Page # 51. • Exercise # 3.2, Q # 9, Q # 11 to 13; Page # 54 to 55. • 3.3 Binary Relations, Examples # 7 & 8; Page # 55-56. • 3.3.1 Relation as Table, Ordered Pair and Graphs; Page # 56-57. • 3.3.2 Functions and its Domain and Range, Example # 9; Page # 57-59. • 3.3.3 Notation of Function; Page # 59. • 3.3.4 Linear and Quadratic Functions, Examples # 10 & 11; Page # 59-60 • Exercise # 3.3, (Complete); Page # 61. • Review Exercise 3: Q # 1 (vii to x), Q # 10 to 16; Page # 62 to 64.
4-Factorization and Algebraic Manipulation	• 4.4 Square Root of an Algebraic Expression, Examples # 26 & 27; Page # 77 to 78. • 4.4.1 Real World Problems of Factorization, Examples # 28 to 30; Page # 78 & 79. • Exercise # 4.4 (Complete); Page # 79 to 80. • Review Exercise 4: Q # 1 (vi), Q # 4 & 5; Page # 81.

5-Linear equations and Inequalities	• 5.3 Feasible Solution, Example # 6; Page # 91-92. • 5.3.2 Maximum and Minimum Values of a Function in the Feasible Solution, Example # 7; Page # 93-94. • Exercise # 5.2 (Complete); Page # 94 to 95. • **Review Exercise 5: Q # 1 (vii, ix & x), Q # 3 to 5; Page # 95 to 96. (Revised)**
6-Trigonometry	• Example 12; Page # 109. • Exercise # 6.3, Q # 10 to 12; Page # 111. • Exercise # 6.4, Q # 2 (vii & viii), Q # 3 (iii); Page # 113. • Exercise # 6.5, Q # 5, 6 & 9; Page # 117 to 118. • 6.6 The Angle of Elevation and the Angle of Depression, Examples # 19 & 20; Page # 118 to 119. • Exercise # 6.6 (Complete); Page # 120. • **Review Exercise 6: Q # 1(iii), Q # 3 (iii to vi), Q # 5 & 6; Page # 121-122. (Revised)**
7-Coordinate Geometry	• Exercise # 7.1, Q # 6, 9 & 10; Page # 128. • Exercise # 7.2, Q # 2 (iii, iv), Q # 12 & 13; Page # 140 to 141. • 7.3 Applications of Coordinate Geometry in Real Life Situations, Examples # 14, 15, 16, 17, 18, 19, 20; Page # 141 to 144. • Exercise # 7.3 (Complete); Page # 144 to 145. • Review Exercise 7: Q # 4 to 10; Page # 146.
8-Logic	Complete chapter is excluded.
9-Similar Figures	• Exercise # 9.1, Q # 8 & 9; Page # 166. • Exercise # 9.2, Q # 5 & 8; Page # 172. • 9.4 Geometrical Properties of Polygon and their applications; Page # 177. • 9.4.1 Geometrical Properties of Regular Polygon; Page # 177-178. • 9.4.2 Geometrical Properties of Triangle; Page # 178. • 9.4.3 Geometrical Properties of Parallelogram, Example # 13; Page # 178. • 9.4.4 Applications of Polygon, Examples # 14 to 18; Page # 179 to 181. • Exercise # 9.4 (Complete); Page # 182. • **Review Exercise 9: Q # 1 (iv, vi to x), Q # 2, 4, 7 to 9; Page # 183 to 184 (Revised)**
10-Graphs of Functions	• 10.2 Exponential Growth / Decay of a Practical Phenomenon through its Graph, Example # 12; Page # 193-194. • 10.2.1 Gradients of Curves by Drawing Tangents, Example # 13; Page # 194. • 10.2.2 Applications of Graph in Real Life, Examples # 14 & 15; Page # 195 to 196. • Exercise # 10.2 (Complete); Page # 197. • Review Exercise 10: Q # 3, 5 to 7; Page # 199.

11-Loci and Construction	• 11.5.2 Intersection of Loci, Examples # 10 to 12; Page # 209 to 211. • 11.6 Real Life Application of Loci; Page # 211. • Exercise # 11.2 (Complete); Page # 212 to 213. • **Review Exercise 11: Q # 1 (x), Q # 2 to 8 Page # 214 (Revised)**
12-Information Handling	• Exercise # 12.1: Q # 8; Page # 224. • 12.2.4 Weighted Mean, Examples # 19 & 20; Page # 234 to 235. • **Exercise # 12.2: Q # 11(ii), Q # 13 to 20; Page # 238 to 239 (Revised)** • Review Exercise 12: Q # 7 & 12; Page # 241 to 242.
13-Probability	• 13.6 Expected Frequency, Example # 11; Page # 255. • 13.7 Real Life Application on Expected Frequency, Examples # 12 & 13; Page # 255 to 256. • Exercise # 13.2, Q # 5 to 8; Page # 257. • **Review Exercise 13: Q # 1 (v), Q # 2 (ii), Q # 3 to 7; Page # 258 to 259 (Revised)**