



آغا خان یونیورسٹی ایگزامینیشن بورڈ  
AGA KHAN UNIVERSITY EXAMINATION BOARD

## Teaching and Learning Resources for Grade IX General Mathematics

### Recommended Key Textbook:

*General Mathematics 9*, Ali Brotheran, Lahore

| Additional Recommended Resource Material |                                    |  |                                |   |
|--|------------------------------------|--|--------------------------------|---|
| Topic No                                 | Topic Title                        | Reference Book   | Chapters in the Reference Book | Reference Website   |
| 1.                                       | Percentage, Ratio and Proportion   | New Syllabus Mathematics, Book 1 (6 <sup>th</sup> edition) | Chapter 10 and 11              | <a href="https://www.mathplanet.com/education/pre-algebra/ratios-and-percent">https://www.mathplanet.com/education/pre-algebra/ratios-and-percent</a>   |
| 2.                                       | <i>Zakat, Ushr</i> and Inheritance | Math wise 7  | Chapter 6                      | <a href="http://www.sabaq.pk/chapter-page.php?vg=punjab-general%20math-9th&amp;vsg=punjab-general%20math-9th-2">http://www.sabaq.pk/chapter-page.php?vg=punjab-general%20math-9th&amp;vsg=punjab-general%20math-9th-2</a> |
| 3.                                       | Business Mathematics               | Count Down 6 and 7   |                                | <a href="https://wordpandit.com/profit-and-loss-concepts/">https://wordpandit.com/profit-and-loss-concepts/</a>   |
|  |                                    | New Syllabus Mathematics, Book 1 (6 <sup>th</sup> edition) | Chapter 11                     |   |

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|----------|--------------------------------------|--|--------------------------------|--|
| 4.       | Sets and Functions                   | Mathematics for IX, Punjab Text Book Board                       | Chapter 1                      | <a href="http://www.math.fsu.edu/~pkirby/mad2104/SlideShow/sl_1.pdf">http://www.math.fsu.edu/~pkirby/mad2104/SlideShow/sl_1.pdf</a>  |
|          |                                      | New Additional Mathematics, Ho Soo Thong and Khor Nyak Hiong     | Chapter 1                      | <a href="https://www.mathsisfun.com/sets/sets-introduction.html">https://www.mathsisfun.com/sets/sets-introduction.html</a>  |
|          |                                      | Mathematics 10, Ilmi kitab khana                                 | Chapter 5                      | <a href="http://www.mathcity.org/matric/9th_science/unit_02">http://www.mathcity.org/matric/9th_science/unit_02</a>  |
|          |                                      | New Secondary Mathematics, Class VIII, Mohsin Ali                | Chapter 1                      |  |
|          | 4.5 Binary Relation<br>4.6 Functions | Mathematics 11, Algebra and Trigonometry, Punjab Text Book Board | Chapter 1                      | <a href="http://www.math-only-math.com/relation-in-math.html">http://www.math-only-math.com/relation-in-math.html</a><br><br><a href="http://www.math-only-math.com/functions-or-mapping.html">http://www.math-only-math.com/functions-or-mapping.html</a> |

| Topic No | Topic Title                        | Reference Book   | Chapters in the Reference Book | Reference Website   |
|----------|------------------------------------|--|--------------------------------|---|
| 5.       | Exponents and Logarithms           | New Additional Mathematics, Ho Soo Thong and Khor Nyak Hiong | Chapter 3                      | <a href="https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions/introduction-to-logarithms/v/logarithms">https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions/introduction-to-logarithms/v/logarithms</a><br><br><a href="http://www.purplemath.com/modules/logs.htm">http://www.purplemath.com/modules/logs.htm</a><br><br><a href="https://www.mathsisfun.com/algebra/logarithms.html">https://www.mathsisfun.com/algebra/logarithms.html</a> |
| 6.       | Algebraic Formulae and Application | Mathematics IX, Caravan Book House Lahore                    | Chapter 4                      | <a href="http://www.purplemath.com/modules/index.htm">http://www.purplemath.com/modules/index.htm</a>   |
|          |                                    | Mathematics IX and X, Sindh Text Book Board                  | Chapter 3                      |   |
|          |                                    | New Syllabus Mathematics, Book 2 (6 <sup>th</sup> edition)   | Chapter 4                      |   |
| 7.       | Factorisation                      | Mathematics IX, Caravan Book House Lahore                    | Unit 5                         | <a href="http://www.purplemath.com/modules/index.htm">http://www.purplemath.com/modules/index.htm</a>   |
|          |                                    | Mathematics IX and X, Sindh Text Book Board                  | Chapter 4                      |   |
|          |                                    | New Syllabus Mathematics, Book 2 (6 <sup>th</sup> edition)   | Chapter 3                      |   |

| Topic No | Topic Title               | Reference Book  | Chapters in the Reference Book | Reference Website  |
|----------|---------------------------|---|--------------------------------|--|
| 8.       | Linear Graphs             | New Syllabus Mathematics, Book 2 ( 6 <sup>th</sup> Edition) | Chapter 8                      | <a href="https://www.mathsisfun.com/algebra/linear-equations.html">https://www.mathsisfun.com/algebra/linear-equations.html</a>  |
|          |                           | Mathematics for IX, Caravan Publisher                       | Chapter 8                      |  |
| 9.       | Matrices and Determinants | Mathematics for IX, Caravan Book House                      | Unit 1                         | <a href="http://www.mathsisfun.com/algebra/matrix-introduction.html">http://www.mathsisfun.com/algebra/matrix-introduction.html</a>  |
|          |                           | Mathematics for IX, Sindh Text Book Board                   | Chapter 6                      | <a href="http://www.sosmath.com/matrix/matrix1/matrix1.html">http://www.sosmath.com/matrix/matrix1/matrix1.html</a>  |
|          |                           | New Additional Mathematics, Ho Soo Thon and Khor Nyak Hiong | Chapter 6                      | <a href="http://www.maths.surrey.ac.uk/explore/emmaspages/option1.html">http://www.maths.surrey.ac.uk/explore/emmaspages/option1.html</a>  |
| 10.      | Practical Geometry        | Mathematics 09 (Science Group), Ilmi Kitab Khana            | Chapter 17                     | <a href="https://www.youtube.com/watch?reload=9&amp;v=Pz64J1hJV8E">https://www.youtube.com/watch?reload=9&amp;v=Pz64J1hJV8E</a>  |
|          |                           | Mathematics 10 (Science Group ), Ilmi KitabKhana            | Chapter 13                     | <a href="http://bestmaths.net/online/index.php/year-levels/year-7/year-7-topics/construction-quadrilaterals/">http://bestmaths.net/online/index.php/year-levels/year-7/year-7-topics/construction-quadrilaterals/</a><br><a href="https://www.teachmathematics.net/page/23093/constructing-quadrilaterals">https://www.teachmathematics.net/page/23093/constructing-quadrilaterals</a> |

**Note:** This resource list has been prepared primarily for teachers. While it can be shared with students, students should not be required to buy multiple books. Schools are encouraged to stock these books in the library. Moreover, these are only suggestions which have been compiled for the ease of teachers and students; schools are encouraged to use other resources for teaching and learning as well, as long as they are in line with the student learning outcomes (SLOs) mentioned in AKU-EB syllabi. Unless specified, AKU-EB does not endorse any of these books or websites. You are advised to use an ad-blocker while accessing the websites. In case any website is not functional for any reason, you may inform us at [examination.board@aku.edu](mailto:examination.board@aku.edu) for an alternative or search material via any search engine. If you have any query, please contact us via email.



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## Teaching and Learning Resources for Grade X General Mathematics

### Recommended Key Textbook:

*General Mathematics 10*, Ali Brotheran, Lahore

| Additional Recommended Resource Material |                       |                |                                |   |
|--|-----------------------|----------------|--------------------------------|---|
| Topic No                                 | Topic Title           | Reference Book | Chapters in the Reference Book | Website   |
| 11.                                      | Financial Mathematics | Maths Wise 8   | Chapter 4                      | <a href="http://www.ipracticemath.com/learn/consumermath/simple-interest-intro">http://www.ipracticemath.com/learn/consumermath/simple-interest-intro</a><br><a href="http://www.ask-math.com/solved-examples-on-simple-interest.html">http://www.ask-math.com/solved-examples-on-simple-interest.html</a><br><a href="http://studymaths.co.uk/workout.php?workoutID=149">http://studymaths.co.uk/workout.php?workoutID=149</a> |

| Topic No | Topic Title                       | Reference Book  | Chapters in the Reference Book | Website  |
|----------|-----------------------------------|---|--------------------------------|--|
| 12.      | Consumer Mathematics              | Get Ahead 8   | Chapter 6                      | <a href="https://www.ipracticemath.com/learn/consumermath">https://www.ipracticemath.com/learn/consumermath</a><br><a href="https://www.mathgoodies.com/lessons/percent/practice_unit10">https://www.mathgoodies.com/lessons/percent/practice_unit10</a> |
| 13.      | Basic Statistics                  | Shahid Jamal  | Chapter 1, 2 and 3             | <a href="http://www.math-only-math.com/real-life-statistics.html">http://www.math-only-math.com/real-life-statistics.html</a>  |
|          |                                   | New Syllabus Mathematics, Book 4 (6 <sup>th</sup> Edition)  | Chapter 4 and 5                | <a href="http://www.mathsisfun.com/data/index.html">http://www.mathsisfun.com/data/index.html</a>  |
|          |                                   | New Syllabus Mathematics, Book 2 (6 <sup>th</sup> Edition)  | Chapter 11                     |  |
| 14.      | Algebraic Manipulation            | Mathematics IX, Caravan Book House Lahore                   | Chapter 6                      | <a href="http://www.purplemath.com/modules/index.htm">http://www.purplemath.com/modules/index.htm</a>  |
|          |                                   | Mathematics for IX and X, Sindh Textbook Board              | Chapter 4                      |  |
| 15.      | Linear Equations and Inequalities | Mathematics IX, Caravan Book House, Lahore                  | Chapter 7                      | <a href="http://www.purplemath.com/modules/ineqsolv.htm">http://www.purplemath.com/modules/ineqsolv.htm</a><br><a href="http://www.purplemath.com/modules/solvein.htm">http://www.purplemath.com/modules/solvein.htm</a>                                 |
|          |                                   | New Syllabus Mathematics, Book 1 ( 6 <sup>th</sup> Edition) | Chapter 7                      |  |

| Topic No | Topic Title                          | Reference Book   | Chapters in the Reference Book | Website  |
|----------|--------------------------------------|--|--------------------------------|--|
| 16.      | Quadratic Equations                  | New Mathematics Counts for Secondary Normal (Academic 3)   | Chapter 5                      | <a href="http://www.purplemath.com/modules/solvquad.htm">http://www.purplemath.com/modules/solvquad.htm</a><br><br><a href="http://www.math-only-math.com/methods-of-solving-quadratic-equations.html">http://www.math-only-math.com/methods-of-solving-quadratic-equations.html</a>   |
| 17.      | Arithmetic and Geometric Sequences   | Mathematics XI Sindh Board                                 | Chapter 6                      | <a href="https://www.mathsisfun.com/algebra/sequences-sums-arithmetic.html">https://www.mathsisfun.com/algebra/sequences-sums-arithmetic.html</a>  |
|          |                                      | Mathematics XI (PTBB)                                      | Chapter 6                      | <a href="https://www.mathsisfun.com/algebra/sequences-sums-geometric.html">https://www.mathsisfun.com/algebra/sequences-sums-geometric.html</a>  |
| 18.      | Fundamentals of Geometry             | New Mathematics Counts for Secondary Normal (Academic 3)   | Chapter 7 and 8                | <a href="https://www.mathsisfun.com/geometry/parallel-lines.html">https://www.mathsisfun.com/geometry/parallel-lines.html</a>  |
|          | 18.3 Congruent and Similar Triangles | Mathematics for IX, Caravan Book House                     | Unit 10                        | <a href="https://www.mathsisfun.com/geometry/triangles-congruent.html">https://www.mathsisfun.com/geometry/triangles-congruent.html</a>  |
|          |                                      | New Syllabus Mathematics, Book 2 (6 <sup>th</sup> edition) | Chapter 1                      | <a href="https://www.khanacademy.org/math/geometry/hs-geo-congruence/hs-geo-triangle-congruence/v/finding-congruent-triangles">https://www.khanacademy.org/math/geometry/hs-geo-congruence/hs-geo-triangle-congruence/v/finding-congruent-triangles</a><br><br><a href="http://www.themathpage.com/atrig/ratio-and-proportion.htm#similar">http://www.themathpage.com/atrig/ratio-and-proportion.htm#similar</a> |



| Topic No | Topic Title         | Reference Book  | Chapters in the Reference Book | Website   |
|----------|---------------------|---|--------------------------------|---|
|          | 18.4 Quadrilaterals | New Syllabus Mathematics, Book 1 (6 <sup>th</sup> edition)  | Chapter 15                     | <a href="http://www.mathplanet.com/education/geometry/quadrilaterals/properties-of-parallelograms">http://www.mathplanet.com/education/geometry/quadrilaterals/properties-of-parallelograms</a><br><br><a href="http://www.bbc.co.uk/bitesize/ks3/maths/shape_space/2d_shapes/revision/2/">http://www.bbc.co.uk/bitesize/ks3/maths/shape_space/2d_shapes/revision/2/</a><br><br><a href="https://www.mbacrystalball.com/blog/2015/11/13/quadrilaterals-properties-parallelograms-trapezium-rhombus/">https://www.mbacrystalball.com/blog/2015/11/13/quadrilaterals-properties-parallelograms-trapezium-rhombus/</a> |
|          | 18.5 Circle         | New Syllabus Mathematics, Book 3 ( 6 <sup>th</sup> Edition) | Chapter 13                     | <a href="https://revisionmaths.com/gcse-maths-revision/shape-and-space/circle-theorems">https://revisionmaths.com/gcse-maths-revision/shape-and-space/circle-theorems</a><br><br><a href="http://www.mathopenref.com/circleinscribed.html">http://www.mathopenref.com/circleinscribed.html</a><br><br><a href="http://www.mathopenref.com/arccentralangletheorem.html">http://www.mathopenref.com/arccentralangletheorem.html</a>   |
| 19.      | Areas and Volumes   | New Secondary Mathematics, Class VIII, Mohsin Ali           |                                | <a href="http://www.cut-the-knot.org/pythagoras/index.shtml">http://www.cut-the-knot.org/pythagoras/index.shtml</a><br><br><a href="https://www.mathsisfun.com/pythagoras.html">https://www.mathsisfun.com/pythagoras.html</a>  |
|          |                     | New Syllabus Mathematics, Book 1 (6 <sup>th</sup> edition)  | Chapter 8 and 9                | <a href="https://www.mathopenref.com/area.html">https://www.mathopenref.com/area.html</a>   |

| Topic No | Topic Title                         | Reference Book   | Chapters in the Reference Book | Website   |
|----------|-------------------------------------|--|--------------------------------|---|
|          |                                     | New Syllabus Mathematics, Book 2 (6 <sup>th</sup> edition)                                 | Chapter 6 and 7                | <a href="https://www.mathopenref.com/volume.html">https://www.mathopenref.com/volume.html</a><br><a href="https://www.mathopenref.com/cubevolume.html">https://www.mathopenref.com/cubevolume.html</a><br><a href="https://www.mathopenref.com/cylindervolume.html">https://www.mathopenref.com/cylindervolume.html</a><br><a href="https://www.mathopenref.com/conevolume.html">https://www.mathopenref.com/conevolume.html</a><br><a href="https://www.mathopenref.com/spherevolume.html">https://www.mathopenref.com/spherevolume.html</a> |
| 20.      | Introduction to Coordinate Geometry | New Mathematics Counts for Secondary Normal (Academic 3)                                   | Chapter 3                      | <a href="http://www.mathopenref.com/coordinateintro.html">http://www.mathopenref.com/coordinateintro.html</a>   |
|          |                                     | New additional Mathematics, Ho Soo Thong and Khor Nyak Hiong Panpac Education Private Ltd. | Chapter 7                      |   |
|          |                                     | New Syllabus Mathematics, Book 3 ( 6 <sup>th</sup> Edition)                                | Chapter 4                      |   |

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