

Foundations of Mathematics 11

Textbook: Foundations of Mathematics 11 (Nelson)

Chapter 1: Inductive and Deductive Reasoning

- a) Analyze and prove conjectures, using inductive and deductive reasoning, to solve problems.
- b) Analyze puzzles and games that involve spatial reasoning, using problem-solving strategies.

Chapter 2: Properties of Angles and Triangles

- a) Derive proofs and solve problems that involve the properties of angles and triangles.

Chapter 3: Acute Triangle Geometry

- a) Solve problems about acute angle triangles that involve the cosine law and the sine law

Chapter 4: Oblique Triangle Trigonometry

- a) Solve problems about oblique angle triangles that involve the cosine law and the sine law including the ambiguous case.

Chapter 7: Quadratic Functions and Equations

- a) Demonstrate an understanding of the characteristics of quadratic functions, including: Vertex, intercepts, domain and range, and axis of symmetry.

Chapter 8: Proportional Reasoning

- a) Solve problems that involve the application of rates.
- b) Solve problems that involve scale diagrams, using proportional reasoning.
- c) Demonstrate an understanding of the relationships among scale factors, areas, surface areas and volumes of similar 2-D shapes and 3-D objects.

Chapter 6: Systems of Linear Inequalities

- a) Model and solve problems that involve systems of linear inequalities in two variables.

Chapter 5: Statistical Reasoning

- a) Demonstrate an understanding of normal distribution, including:
 - standard deviation
 - z-scores.
- b) Interpret statistical data, using:
 - confidence intervals
 - confidence levels
 - margin of error.

Throughout the year students will be working on a Mathematics Research Project on a historical event or an area of interest.