

Mathematics III

Department: Mathematics	Key of the matter: 681/685
Requirements: Have passed mathematics II of Middle School Mathematics	Year: Third
Weekly load: 5	Date of elaboration April 2017

Topics

Unit 1

- 1.1. Experiment with transformations in the plane.
- 1.2. Understand congruence in terms of rigid motions.
- 1.3. Prove geometric theorems.
- 1.4. Make geometric constructions.

Unit 2

- 2.1. Understand similarity in terms of similarity transformations.
- 2.2. Prove theorems involving similarity.
- 2.3. Define trigonometric ratios and solve problems involving right triangles.
- 2.4. Apply geometric concepts in modeling situations.
- 2.5. Apply trigonometry to general triangles.

Unit 3

- 3.1. Explain volume formulas and use them to solve problems.
- 3.2. Visualize the relation between two-dimensional and three-dimensional objects.
- 3.3. Apply geometric concepts in modeling situations.

Unit 4

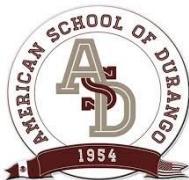
- 4.1. Use coordinates to prove simple geometric theorems algebraically.
- 4.2. Translate between the geometric description and the equation for a conic section.

Unit 5

- 5.1. Understand and apply theorems about circles.



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- 5.2. Find arc lengths and areas of sectors of circles.
- 5.3. Translate between the geometric description and the equation for a conic section.
- 5.4. Use coordinates to prove simple geometric theorem algebraically.
- 5.5. Apply geometric concepts in modeling situations.

Unit 6

- 6.1. Understand independence and conditional probability and use them to interpret data.
- 6.2. Use the rules of probability to compute probabilities of compound events.
- 6.3. Use probability to evaluate outcomes of decisions.

Unit 7

- 7.1. Understand the relationship between zeros and factors of polynomials.
- 7.2. Use complex numbers in polynomial identities and equations.
- 7.3. Perform arithmetic operations on polynomials.
- 7.4. Rewrite rational expressions.



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