Math Basics for Quantum Computing/Cryptography: A review (Unit 1)

UNIT

Abhishek Parakh - October 21, 2018

Evaluate and Synthesize

Students will be able to implement programs for various vector and matrix operations.

Evaluate and Synthesize

Students will be able to implement programs for various operations on complex numbers.

Apply and Analyze

Students will be able to calculate the projection of one vector onto another vector.

Apply and Analyze

Students will be able to calculate inner product and norm of vectors and matrices.

Apply and Analyze

Students will be able to calculate modulus and conjugate of complex numbers and prove their basic properties.

Remember and Understand

Students will be able to restate complex numbers as ordered pairs.

Evaluate and Synthesize

Students will be able to change between Cartesian and polar representations for complex numbers.

Apply and Analyze

Students will be able to apply properties of Hermitian and unitary matrices.

Apply and Analyze

Students will be able to apply concepts of complex vector spaces and perform various operations on them.

Apply and Analyze

Students will be able to apply the concept of linear independence, basis and dimensions of complex vector space.

Apply and Analyze

Students will be able to apply basic operations on complex numbers.