

PHY502 Problem Set #2

(1) In class we showed that the dimension of the space of n -tuples of complex numbers over the field of complex numbers is

$$\dim(\mathbb{C}^n) = n. \tag{1}$$

What is the dimension of the space of n -tuples of complex numbers defined over the field of reals? Find a basis for the vector space.

(2) Lipshutz Problem 4.79

(3) Lipshutz Problem 4.81

(4) Lipshutz Problem 4.90

(5) Lipshutz Problem 4.92

(6) Lipshutz Problem 4.98