1.

Lets be the group of real unitary matrices

1. Prove, that U(2,R) is real linear space and find one of its bases.
2. To study the matrices for linear dependence (independence)



 and

2. In the linear space regarding its standard basis are given the vectors:

3\*1 = 4\*e\*2 + 7\*e\*3 + 3\*e\*4, 3\*2 = (4 − 3, −3, 7 − 4, 4 − 3), 3\*3 = (4 − 3, 4 − 3, 2\*7 − 4, 4)

To study the matrices for linear dependence (independence) of the system of vectors

and to find Rank A.