Worksheet #8

(Wednesday, October 18, 2023)

Name

Questions (5 pts):

Consider observables represented by $A = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}, B = \begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix}$ in some

orthonormal basis formed by $|\varphi_1\rangle, |\varphi_2\rangle$.

1) Is A a C.S.C.O.?

2) Is B a C.S.C.O. ?

3) Is a set of operators A and B a C.S.C.O.?

4) If yes on 3), give a set of eigenvectors common to A and B that form a unique basis.