Physics 115A Fourth Problem Set

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1. Is the matrix that represents the identity operator independent of basis used to make the representation? Suppose the n eigenvalues of a linear operator in an n-dimensional space are all equal to one another ('totally degenerate'). Does the matrix representation of that operator depend upon the basis?

2. Exercise 1.8.2, page 41 of your text.

3. Exercise 1.8.3, page 41 of your text.

4. Exercise 1.8.5, page 42 of your text.

5. Exercise 1.8.10, page 46 of your text.