Assignment 8

1. If an operator $A$ is applied to the state $|a\rangle$, the eigenvector will be $|a\rangle$.
2. If $|n\rangle$ is the eigenstate of $|\Delta\rangle$, the eigenvector will be $|n\rangle$.
3. In the harmonic oscillator basis, the bra-ket states are $|2\rangle$, $|1\rangle$, $|0\rangle$, $|\pm 1\rangle$, $|\pm 2\rangle$, $|\pm 3\rangle$, $|\pm 4\rangle$, $|\pm 5\rangle$, $|\pm 6\rangle$, $|\pm 7\rangle$, $|\pm 8\rangle$, $|\pm 9\rangle$.
4. The number state $|n\rangle$ is the ground state of the harmonic oscillator which is annihilated by $|\Delta\rangle$.

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