1 Dimensional Analysis of Kets

(a) $\langle\Psi|\Psi\rangle = 1$ Identify and discuss the dimensions of $|\Psi\rangle$.

(b) For a spin-$\frac{1}{2}$ system, $\langle\Psi|+\rangle\langle+|\Psi\rangle + \langle\Psi|-\rangle\langle-|\Psi\rangle = 1$. Identify and discuss the dimensions of $|+\rangle$ and $|-\rangle$.

(c) In the position basis $\int \langle\Psi|x\rangle\langle x|\Psi\rangle\, dx = 1$. Identify and discuss the dimesions of $|x\rangle$.