Recitation #9
Quantum 521

1. Consider a simple harmonic oscillator state at $t = 0$

$$|\psi\rangle = A\,|0\rangle + B\,|1\rangle$$

   Find A,B that gives a normalized state that maximizes $\langle\hat{q}\rangle$ where $\hat{q}$ is the dimensionless position operator.

2. Find $\langle\psi(t)|\hat{q}|\psi(t)\rangle$.