

# Orthogonality of eigenfunctions of Hermitian operators

Imagine that  $\hat{A}\psi_a = a\psi_a$  and  $\hat{A}\psi_b = b\psi_b$ .

$$\begin{aligned}\int \psi_a^* \hat{A} \psi_b &= \int \psi_b (\hat{A} \psi_a)^* & (1) \\ b \int \psi_a^* \psi_b &= a^* \int \psi_b \psi_a^* \\ (b - a) \int \psi_a^* \psi_b &= 0\end{aligned}$$