

## Quiz 5

Friday, April 14, 2017 11:25 AM

For the two lowest energy wavefunctions of the  $H_2^+$  molecule, fill in the table below

### Bonding orbital

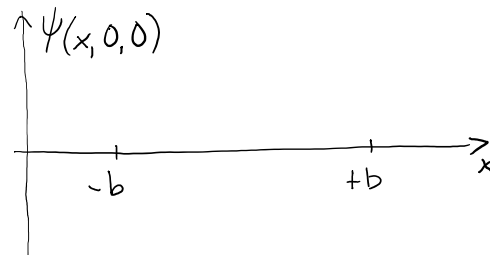
Vector representation

$$\begin{bmatrix} 1/\sqrt{2} \\ 1/\sqrt{2} \end{bmatrix}$$

Ket representation

Wavefunction  $\Psi(\vec{r})$

Sketch  
(line section along the x-axis)



### Anti-bonding orbital

Vector representation

$$\begin{bmatrix} 1/\sqrt{2} \\ -1/\sqrt{2} \end{bmatrix}$$

Ket representation

Wavefunction  $\Psi(\vec{r})$

Sketch  
(cross section along the x-axis)