Conventions for "states"

- Can't exactly specify the states, but have "conventional" choices (details in text):
- (WRITE THESE ON THE BOARD!!)

$$|+\rangle_x = \frac{1}{\sqrt{2}}[|+\rangle + |-\rangle] \qquad\qquad |+\rangle_y = \frac{1}{\sqrt{2}}[|+\rangle + i|-\rangle]$$

$$|-\rangle_x = \frac{1}{\sqrt{2}}[|+\rangle - |-\rangle] \qquad\qquad |-\rangle_y = \frac{1}{\sqrt{2}}[|+\rangle - i|-\rangle]$$

- Row 1: write |+> and |-> in terms of $|+>_y$ and $|->_y$
- Row 2: show that the $|+>_y$ and $|->_y$ states are orthonormal
- Row 3: write $|+>_x$ in terms of $|+>_y$ and $|->_y$