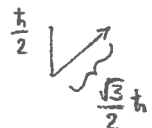
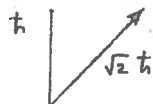


(a) $s = \frac{1}{2}, m_s = \frac{1}{2}$

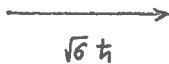
$\frac{\hbar}{2}$  $|\vec{S}| = \sqrt{\frac{1}{2} \cdot \frac{3}{2}} \hbar = \frac{\sqrt{3}}{2} \hbar$

(b) $l=1, m_l=1$



$|\vec{L}| = \sqrt{1 \cdot 2} \hbar = \sqrt{2} \hbar$

(c) $l=2, m_l=0$



$|\vec{L}| = \sqrt{2 \cdot 3} \hbar = \sqrt{6} \hbar$