

**Homework Assignment #2**  
**(0 points)****Due never**  
**(at lecture)**

2.7 (10 points) Challenge problem. By any means at your disposal, *find* the rotation matrix  $D_{M'M}^{(J)}(\mathcal{R}) = \langle JM'|R|JM\rangle$ , for an arbitrary rotation  $\mathcal{R}$ , in terms of the corresponding spin- $\frac{1}{2}$  rotation matrix,  $D_{\epsilon'\epsilon} \equiv D_{\epsilon'/2, \epsilon/2}^{(1/2)}(\mathcal{R}) = \langle \frac{1}{2}, \frac{1}{2}\epsilon'|R|\frac{1}{2}, \frac{1}{2}\epsilon\rangle$ .