

Homework 2 (10 points each problem)

1. Show that the rotation of the position vector \vec{r} around unit vector \hat{n} by an angle ϵ will result to the vector \vec{r}' such that

$$\delta \vec{r} = \epsilon \hat{n} \times \vec{r}$$

2. Show that the angular momentum $L = r \times p$ is a pseudovector

3. Derive the expressions for the generators of three dimensional rotation the vectors

4. Obtain commutation relations between the rotational generators