

Homework #2

Due Wednesday, September 17, 2014

Reading. This week: Chaps 3 & 4. Next week: 4 & 5.

1. HRW Chap 3, P16.
2. HRW Chap 3, P31.
3. HRW Chap 3, P29.
4. Use the definition of scalar product, $\vec{a} \cdot \vec{b} = ab \cos \theta$, and the fact that $\vec{a} \cdot \vec{b} = a_x b_x + a_y b_y + a_z b_z$ to calculate the angle between the two vectors given by $\vec{a} = 2\hat{i} + 3\hat{j} + 3\hat{k}$ and $\vec{b} = 2\hat{i} + \hat{j} + 3\hat{k}$.
5. HRW Chap 3, P43.
6. The minute hand of a wall clock measures 8 cm from its tip to the axis about which it rotates. The magnitude and angle of the displacement vector of the tip are to be determined for three time intervals. What are the (a) magnitude and (b) angle from a quarter after the hour to half past, the (c) magnitude and (d) angle for the next half hour, and the (e) magnitude and (f) angle for the hour after that?
7. HRW Chap 4, P19.
8. HRW Chap 4, P31.
9. HRW Chap 4, P32.