UNIT 13 HOME WORK AFTER SESSION ONE

➡**SmartPhysics:** *View the Prelecture 20 "Angular Momentum Vector and Precession" before the class of next session and answer the checkpoint questions. (The online Homework is due the next day.)*

SP13-1) A particle is located at the vector position $\vec{r} = (4\hat{\imath} + 6\hat{\jmath})$ m and the force acting on it is given by $\vec{F} = (3\hat{\imath} + 2\hat{\jmath})$ N. What is the torque acting on the particle about the origin?

Hint: The vector cross product between two vectors $\vec{A} = A_x\hat{\imath} + A_y\hat{\jmath} + A_z\hat{k}$ and $\vec{B} = B_x\hat{\imath} + B_y\hat{\jmath} + B_z\hat{k}$ can be calculated as follows:

$$\vec{A} \times \vec{B} = (A_yB_z - A_zB_y)\hat{\imath} + (A_zB_x - A_xB_z)\hat{\jmath} + (A_xB_y - A_yB_x)\hat{k}$$

UNIT 13 HOME WORK AFTER SESSION TWO

➡**SmartPhysics:** *View the Prelecture 21 "Simple Harmonic Motion" before the class of next session and answer the checkpoint questions. (The online Homework is due the next day.)*

• *Complete Unit 13 entries in the Activity Guide*