# Rotational Dynamics
Concept Questions

Question 1: In the figure, a force of magnitude F is applied to one end of a lever of length L. What is the magnitude of the torque about the point S?
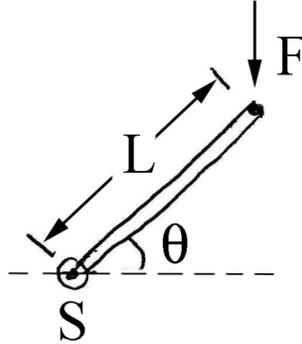
1. $FL\sin\theta$
2. $FL\cos\theta$
3. $FL\tan\theta$
4. None of the above

Question 2: Torque: Consider two vectors $\vec{\mathbf{r}}_{P,F} = x\hat{\mathbf{i}}$ with $x > 0$ and $\vec{\mathbf{F}} = F_x\hat{\mathbf{i}} + F_z\hat{\mathbf{k}}$ with $F_x > 0$ and $F_z > 0$. The cross product $\vec{\mathbf{r}}_{P,F} \times \vec{\mathbf{F}}$ points in the

1) + x-direction

2) -x-direction

3) +y-direction

4) -y-direction

5) +z-direction

6) -z-direction

7) None of the above directions

Question 3: Chrome Inertial Wheel: A fixed torque is applied to the shaft of the chrome inertial wheel. If the four weights on the arms are slid out, the component of the angular acceleration along the shaft direction will
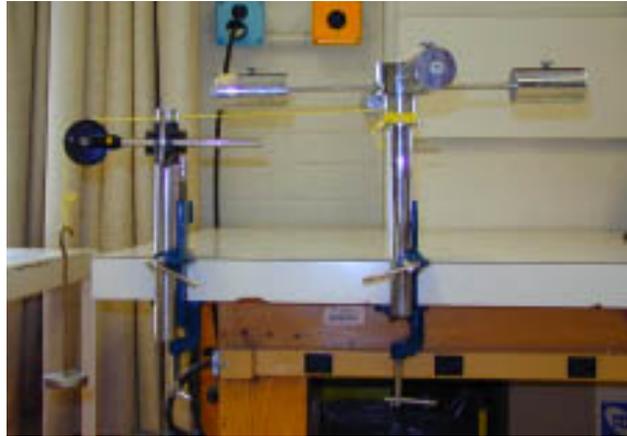
1. increase.

2. decrease.

3. remain the same.

4. Not enough information is given to decide.

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