Problems:

2. Goldstein, Problem 5-11.
4. Goldstein, Problem 5-29.
5. A flat rectangular plate of mass \( M \) and sides \( a \) and \( 2a \) rotates with angular velocity \( \omega \) about an axle through two diagonal corners, as shown. The bearings supporting the plate are mounted just at the corners. Find the force on each bearing due to rotation.