

Physics 262: Problem Set #7

These problems are due at the end of the day on Friday 22 Feb

1. Kleppner and Kolenkow, problem 6.27, pg. 283.
2. A stick of mass m and length ℓ is being spun about the \hat{z} axis at angular speed ω . It lies at an angle θ with respect to the axis, with one end attached to a pivot directly on the axis, and the other is attached to the axis by a string (of length $\ell \sin \theta$). Find the tension in the string and the force exerted by the pivot.
3. (BONUS) Analyze the previous problem in the *rotating* frame, in which the stick is at rest, and the tension and pivot forces cancel the effect of the centrifugal force.
4. Kleppner and Kolenkow, problem 9.1, pg. 406.
5. Kleppner and Kolenkow, problem 9.2, pg. 406.
6. Kleppner and Kolenkow, problem 9.5, pg. 406.
7. Kleppner and Kolenkow, problem 9.6, pg. 407.