HW #30 CID 6265

(1) Euler's Equations come from the conversion of space frame torque to body frame torque, and is expressed in a fixed principal axes basis. They are hard to solve for with non-zero torque since the components of torque as seen in the body frame are complicated functions of time.

(2) With $\lambda_1 = \lambda_2 \neq \lambda_3$, then ω_3, or the component of angular velocity along the principal axis $\hat{e}_3$, will be constant. Also, L_3 component of angular momentum will be conserved. $\hat{e}_1, \hat{e}_2, \hat{e}_3$ are always conserved in body frame.