Problem 20 (Understanding Inertia Matrices)

(a) The matrix (2) cannot represent an inertia matrix because it is not symmetric.

(b) The object has more 'surface area' when looked along the 3-axis than the 1-axis. So *a* should be smaller than *c*. Furthermore, it is symmetric about the plane of the 1- and 2-axis. Therefore, the products of inertia *e* and *f* are equal to 0. Yet, since it is symmetric about the other coordinate planes, the product of inertia *d* is generally not 0. Thus, *d=0* is not necessarily a correct statement.