1. Convert the matrix $\mathbf{R}$ (aka $^{XYZ}\mathbf{R}_{uvw}$) of Homework 1 to System II Euler angles (2 solutions)

2. Convert the matrix $\mathbf{R}$ (aka $^{XYZ}\mathbf{R}_{uvw}$) of Homework 1 to axis-angle form (2 solutions)

3. Convert System II Euler angles $(90^\circ, 90^\circ, 90^\circ)^T$ to a 3x3 rotation matrix

4. Convert System II Euler angles $(30^\circ, 60^\circ, 90^\circ)^T$ to a 3x3 rotation matrix

5. Convert axis-angle given by a rotation of $120^\circ$ about an axis through $(1, -1, 1)^T$ to a 3x3 rotation matrix. (Remember to normalize the vector first.)

6. For a rotation about the X axis by $90^\circ$, convert to
   a. System II Euler angles (2 solutions)
   b. Axis-angle form (2 solutions)
   c. A 3x3 rotation matrix