

These questions relate to lecture material and aim to highlight the most important concepts. We will cover questions similar to these for our midterm

1. Frame 1 is rotated 30 degrees around the Z axis from frame 0. What 3x3 rotation matrix corresponds to this rotation? Draw frame 1 and frame 0.
2. Frame 1 is rotated 30 degrees around the Z axis and translated (1,4,6) units from frame 0. What is the 4x4 transformation matrix which converts from frame 1 to frame 0? Draw frame 1 and frame 0.
3. Consider frame 1 from the previous question. What is the coordinate of the origin of frame 1 with respect to frame 0?
4. Again, consider frame 1 from question 2. What is the coordinate of (1,0,0) in frame 1 with respect to frame 0?
5. Again using frame 0 and frame 1 from question 2. What is the coordinate of the point (0,0,0) in frame 0 with respect to frame 1?