2.7 Handwrite

Welcoming Environment: Actively listen to others and encourage everyone to participate! Keep an open mind as you engage in our class activities, explore consensus and employ collective thinking across barriers. Maintain a professional tone, show respect and courtesy, and make your contributions matter.

Discuss and keep track of any questions your group has. Ask me questions during group work time as well as when I bring us back together. Try to help each other solidify and review the language of linear algebra, algebra, visualizations and intuition from this section, including those related to:

- 2D and 3D computer graphics as columns of a matrix — connect the dots!
- effects of 2D and 3D linear transformations from 1.8 and 1.9 and 3D transformations on figures—algebra and matrix representation and geometry and visualization
- homogeneous coordinates
- composite transformations CBA is read right to left like functions, where A is the first action
- rotate about a point other than the origin (Figure 7)

Take out your notes from the activities due today as well as both fill-in guides. Use them and each other to respond to the following by handwriting in the language of our class. Use only what we have covered so far in our readings, videos and quizzes.

1. **Building Community**: What are the preferred first names of those sitting near you? If you weren't able to be there, give reference to anyone you had help from or write N/A otherwise.

2. Consider the linear transformation that rotates an object about the point $(6, 8)$ by 60° degrees.

   (a) Write the linear transformation as a composition of 3 matrices so that you list CBA (where it would be CBAObject). Do NOT multiply them together—list the three matrices in the correct order.

   (b) Explain what each of the 3 matrices does individually.

3. If C is a large digital figure like Yoda, but one given as column vectors, and A and B are 3×3 matrices, is it better to compute $(AB)C$ or $A(BC)$, or is there no difference? Try to address this using multiple perspectives and explain your reasoning.

Next, as time allows before I bring us back together, work on the additional activities including any pollev activities and respond in your notes rather than here.

Help each other and PDF responses to ASULearn: If you are finished with the handwrite and additional activities before I bring us back together, first ensure that your entire group is finished too, and if not, help each other. Then submit your handwrite, continue reviewing and solidifying or discuss upcoming class work.

Collate your handwritten responses, preferably on this handout, into one full size multipage PDF for submission in the ASULearn assignment. I recommend you turn it in sometime today, but you have until the morning before the next class.