



In the four bar linkage shown above, R4 is the driver, R2 is the follower, R3 is the connector, and R1 is the frame, where $R1=4.14$, $R2=3.25$, $R3=3.77$, $R4=2.57$. Since the sum of the shortest and longest links is less than the sum of the two remaining links, this linkage is a Grashoff mechanism. There are four possible Grashoff mechanisms depending on which link is the shortest. When the shortest link is the driver, the mechanism is a crank-rocker, which is the case here.

Write a MATLAB program as follows:

- 1) θ_4 will go from 84° to 804° in steps of 1° .
- 2) For each value of θ_4 , call the function newton2 to calculate θ_2 and θ_3 . Use 75° and 30° as the initial guesses for θ_2 and θ_3 . Plot the four bar linkage, pausing .01 sec between each orientation. Pause an additional 7 sec after the first orientation. Choose the origin at the lower left corner. Plot R1, R2, R3 and R4 in black, red, green and blue. Use the pbaspect statement. The graph for the final orientation should look like the one on the attached sheet.

Lab 2

