MIE301 – Fall 2020
Lab 3: Mechanism Optimization
Report

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a) Plot your optimization plot, g as a function of the extension length.

Answer:

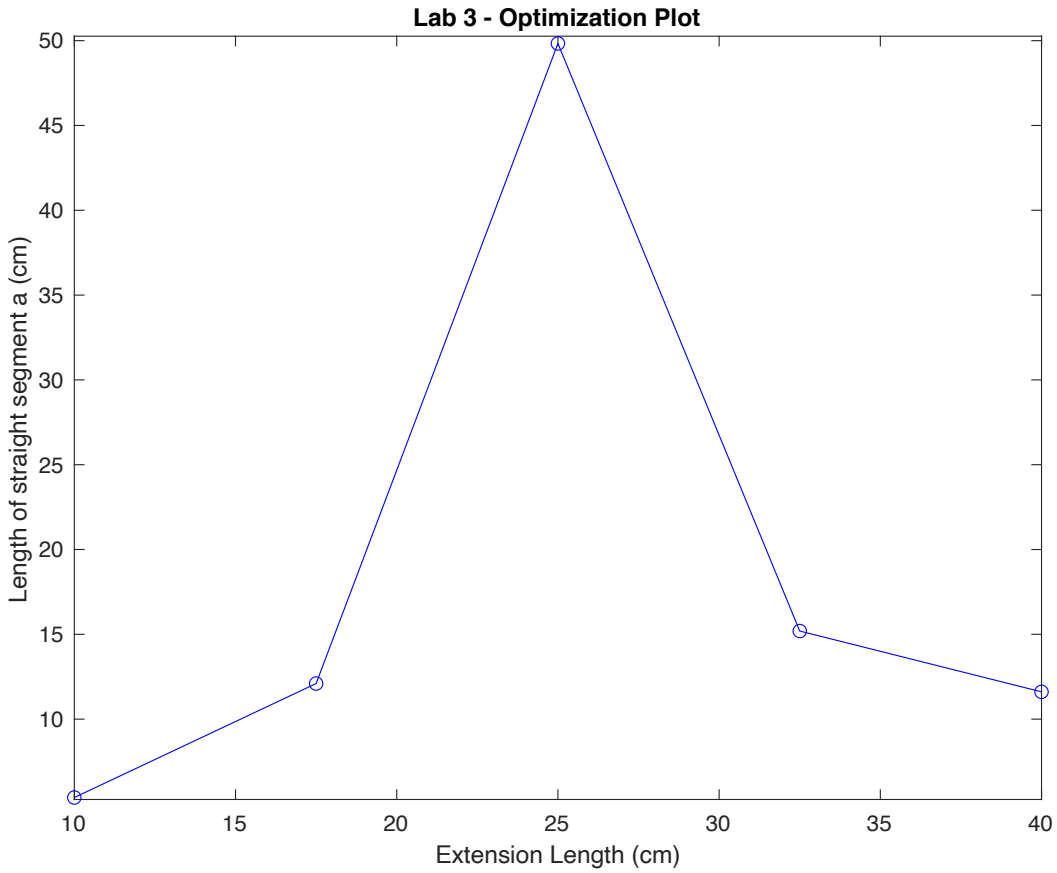

Figure-a: Straight segment length vs extension link length

b) Plot the optimized trace, with the straight line region precisely marked. Include the optimized mechanism links.

Answer:

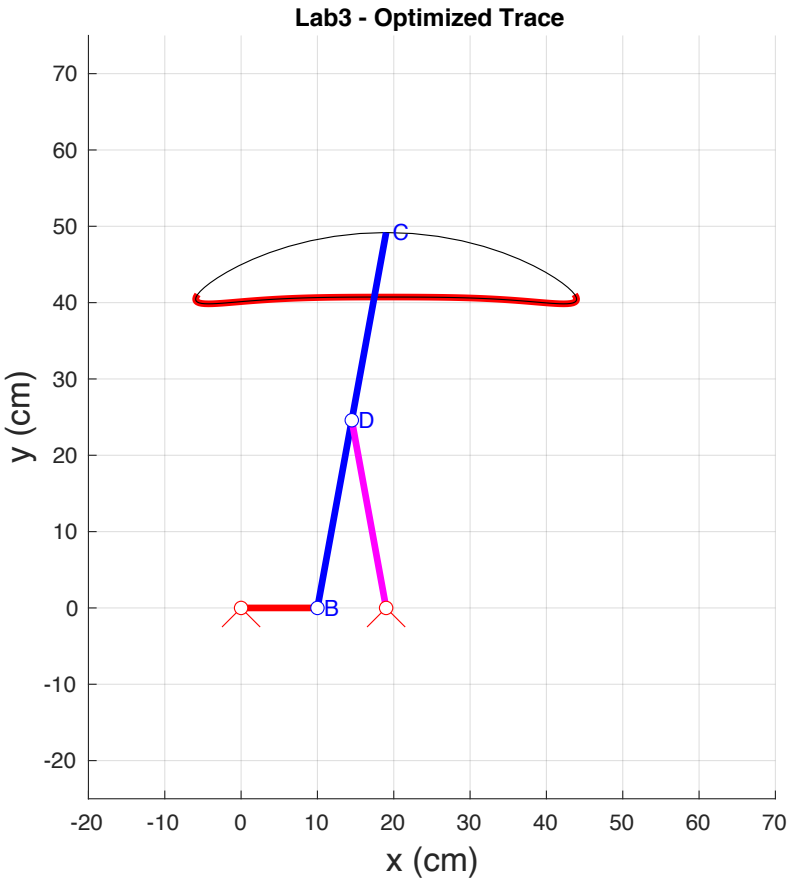

Figure-b: Optimized trace of path of point C

c) What is the input link angle at the beginning and end of the straight line segment?
Answer:

Beginning: 57.6˚
End: 309.6˚

d) What is the average speed of the trace point through the straight region? ($\dot{\theta}_2$= 60 rpm)
Answer:

Average speed = total length/total time

The average speed is 71.1916 cm/s.

e) How does the size of the straight-line tolerance (*a*) affect your optimized path length?
Answer:

Increasing “a” will increase the length of the optimized path, because it allows more of the trace to be considered a part of the straight segment.