

YouTube Link: <https://youtu.be/MwonpbineDs>

Video link: https://usfedu-my.sharepoint.com/:v:/g/personal/deanf1_usf_edu/EZodIGs-pLlJgkGEu0HxtUsB6DduCI8sz83T1LoRePr4Ng?e=RvhhUD

Task 1 Rectangle Traversal

- 1) Task with $H=10$ in, $W=20$ in, and $V=5$ in/sec. Answer the following:
 - motion is possible
 - Found T by finding duration of turns and duration of linear traversals
- 2) Task with $H=15$ in, $W=10$ in, and $V=10$ in/sec. Answer the following:
 - Motion not possible as the v_l and v_r speeds exceed max of 6.28

Task 2: Double Circle Traversal

- 1) Task with $R_1=5$ in, $W=10$ in, and $V=5$ in/sec. Answer the following:
 - Motion is possible
 - Found T by finding the distance via the circumference of the circle in respect to Velocity
- 2) Task with $R_1=0$ in, $W=10$ in, and $V=2$ in/sec. Answer the following:
 - Motion is possible
 - Radius of 0 means the robot will spin in place

Conclusion:

I learned that even though the math makes sense the physical aspect of the robot add error in the expected movements. I had to add a error in for slippage and even for the turns ($\pi / 2$) there was always a little error which adds up turn after turn. In this lab I learned a lot more about Kinematic equations and have been reminded how tedious difference in measurements can be.