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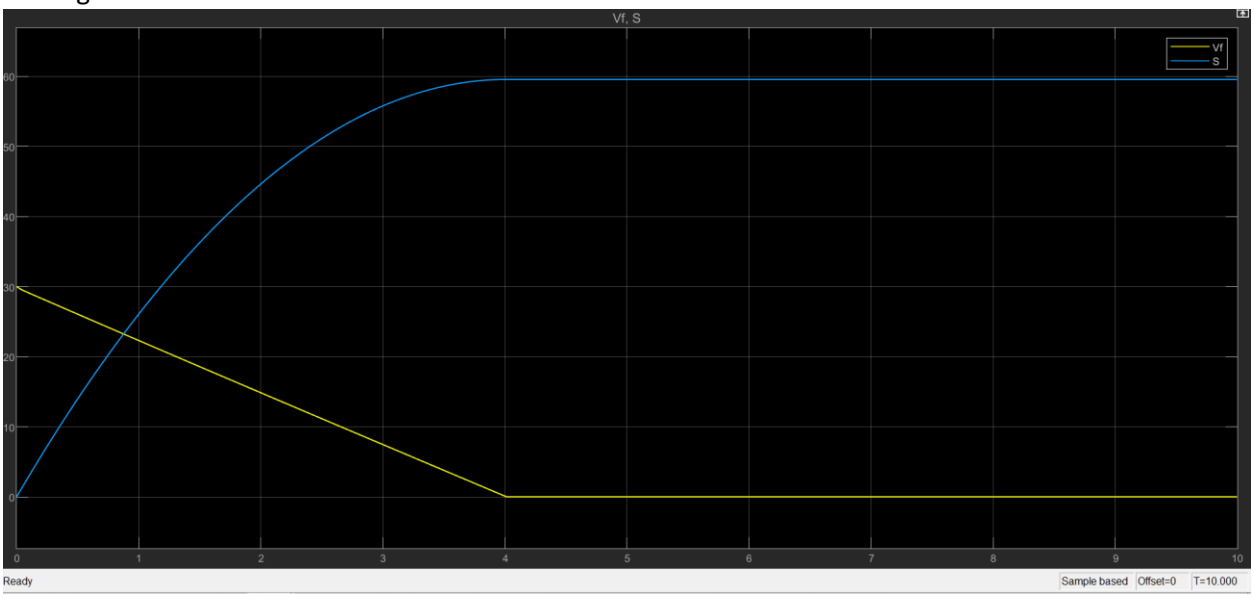
Assignment 1b : Intro Simulink

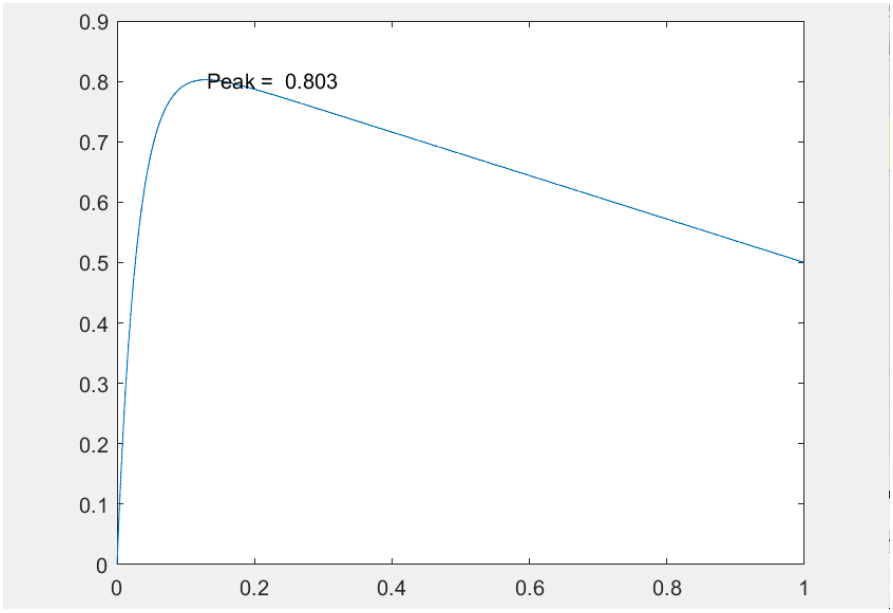
Problem 3

a) Model attached.

b) It takes approximately 4 seconds for the car to come to halt and it slides about 60 meters before coming to stand still.



c) μ(λ) peaks at 0.803 for λ = 0.1299



d) Value of K_i = 1,00,000 by trial and error.

e) The goal with ABS is to not let the car slide and stop it slowly. The feedback controller with proper tuning keeps the value of λ close to 0.12. It takes approximately 2.6 seconds for the car to come to halt and it slides about 40 meters before coming to stand still.