EXERCISE 4

MAT260, SPRING 2017

Problem 1. Exercise 3.5 from the textbook.

Problem 2. Exercise 3.6 from the textbook.

Problem 3. Exercise 3.8 from the textbook.

Problem 4. The damped pendulum equation for a cord of length 1 reads

$$\theta'' + \alpha\theta' + g\sin\theta = 0 \tag{1}$$

where $\alpha > 0$ is the damping constant and g the gravitional constant.

a): Write it as a system of 2×2 and find its Jacobian

b): Discuss the stiffness of the system. (θ is the angle between the cord and and the vertical line, and we assume it is in the interval $[-\pi/2, \pi/2]$).