

Math 3280 Worksheet 37: Second order systems

Group members (2 to 4): \_\_\_\_\_

- (1) Consider two blocks of mass  $m_1 = m_2 = 1$  connected by springs to each other and to walls as shown below. The displacement of the masses from their equilibrium positions are denoted by  $x_1$  and  $x_2$ . The stiffness of the three springs are  $k_1 = 4$ ,  $k_2 = 6$ , and  $k_3 = 4$  as shown. Compute the natural frequencies and describe the natural modes of oscillation.

