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System Simulation
HW 15

A) case 1: $m_1 = \frac{R_0}{a^2 b c D_1 D_m} = 0.0367$

case 2: $m_2 = 1.4017$

case 3: $m_3 = 0.1250$

B) see attached matlab

C) in case 1, the number of infected humans and mosquito population both drop rather quickly and continue to decrease ($m = 0.0367$)
in case 2, the number of infected humans quickly rises to a max, as does the mosquito population ($m = 1.4017$)
in case 3, the number of infected humans seems to drop quicker than in case 1 which doesn't make sense because the m value is greater. The both decrease faster at the beginning than decrease slowly as time goes on ($m = 0.125$)