Consider the cubic population model

Where and are given constants, such that and . Note that the population is measured in units of thousands.

1. Find and classify the steady states of this equation.
2. If the initial population is describe, without proof, the future of the population, distinguishing various cases on the size of relative to the steady states and .
3. Obtain the solution of the differential equation with initial condition =2, assuming the parameters and .

**Hints:** If you encounter a quartic equation for , consider the substitution . For choosing the right signs in extracting roots, you should assume .