In a fish farm, fish are harvested at a constant rate of 2500 fish per year. The per-capita death rate for the fish is 0.2 fish per year and the per-capita birth rate is 0.7 fish per year.

1. Derive a difference equation to describe the population of the fish.
2. Solve this difference equation and determine the steady state. Is it stable or unstable?
3. What is the minimum initial population to sustain fishing at a rate of 2500 per year?