## Differential Equations Seminar: Week 9 Exercises

1. For $x^{\prime}=x^{3}(\lambda-x)$, find the values of $\lambda$ where bifurcation occurs. Draw phase line diagrams for values of $\lambda$ close to the value of $\lambda$ where bifurcation occurs.
2. Draw the bifurcation diagram for $x^{\prime}=\lambda-x^{2}$.
