In the problems 1 – 3 plot the bifurcation diagrams

1. \( \dot{x} = ax + 3 \)
2. \( \dot{x} = x^2 - ax \)
3. \( \dot{x} = x^3 - x + a \)

In the next three problems, plot the integral curves, then solve the equations, and compare the graphs and formulas.

4. \( \dot{x} = x^2 - 1 \)
5. \( \dot{x} = x^2 - 3x \)
6. \( \dot{x} = \cos x \)

Supplementary part

7. (6+6+8) HSD 1.4 a, b, c