Qualitative features of solutions

For each of the following differential equations, find the equilibria, sketch representative solutions, and determine where concavity changes direction. Throughout, $s, L, P, Q$ are positive constants.

1. \( \frac{dN}{dt} = sN^2 (L - N) \).
2. \( \frac{dN}{dt} = sN (L - N)^2 \).
3. \( \frac{dN}{dt} = sN^2 (L - N)^2 \).
4. \( \frac{dN}{dt} = sN^3 (L - N)^3 \).
5. \( \frac{dN}{dt} = sN (P - N) (Q - N) \).