HW4.1 Investigate the behavior of solutions of

$$x' = t(1 - x^2)$$

without actually solving the equation. In particular, investigate monotonony and convexity of solutions. Sketch a picture (of size 10x10 cm at least).
Do not forget to outline stationary solutions.
Also, the next problem can be helpful.

HW4.2 Show that solutions are symmetric about the vertical axis. More precisely: if $x = x(t)$, $t \in I$ is a solution, then also $\tilde{x}(t) := x(-t)$, $t \in I$ is a solution.