HW #2

1. Goldstein Ch. 2, Ex. 10

2. Goldstein Ch. 2, Ex. 12

3. Goldstein Ch. 2, Ex. 18

4. A particle of mass m moves in 1D s.t. its Lagrangian is given by

$$\mathcal{L} = \frac{m^2 \dot{x}^4}{12} + m\dot{x}^2 V(x) - V^2(x),$$

where V is a smooth function of x. Find EoM for $x(t)$ and interpret it in terms of the physical nature of the system.