A particle of effective mass $m$ is acted on by a potential energy given by

$$U(x) = U_0 \left(-ax^2 + bx^4\right)$$

where $U_0$, $a$, and $b$ are positive constants.

a) Find the points where the force on the particle is zero. Classify them as stable or unstable.

b) If the particle is given a small displacement from an equilibrium point, find the angular frequency of small oscillation.