Paper Homework No. 08 (Spring 2018)

PHYS 205A: University Physics

Due date: Wednesday, 2018 Apr 4, 12.00pm, in class

_____   _____
(Name)   (Signature)

Instructions

1. Your submission should include only this page. Other forms of submissions will not be accepted. Please print this page, and write your solution on the back side.

2. Show your thought process in detail and organize it clearly.

3. Make sure your answer has the correct units and the right number of significant digits.

Question

The potential energy of a particle moving along the x axis is given by

$$U(x) = ax^2 - bx^4, \qquad a > 0, \quad b > 0. \tag{1}$$

1. Plot $U(x)$ with respect to x.

2. Determine the points on the x axis when the force on the particle is zero, that is, the particle is in equilibrium.

3. What can you conclude about the stability of the particle at these points.