
Worksheet 12: Conservative and Non-conservative Forces

Objective

- Classify forces as conservative or non-conservative

Summary

A conservative force is the negative gradient of a potential function with a curl of zero.

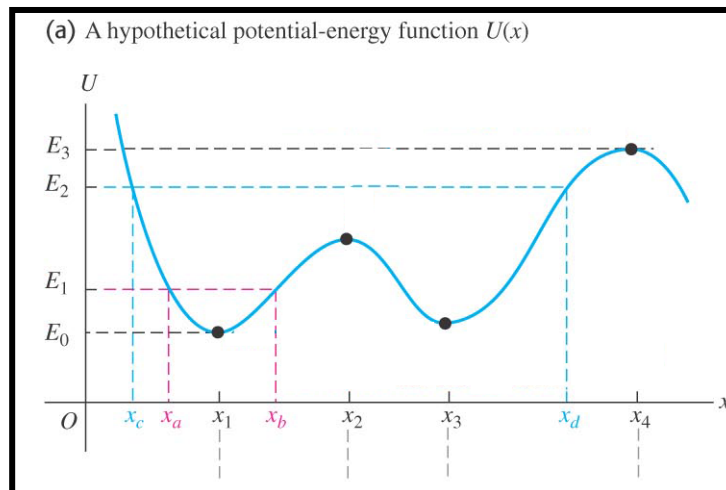
$$\vec{F} = -dU/dx$$

Problems

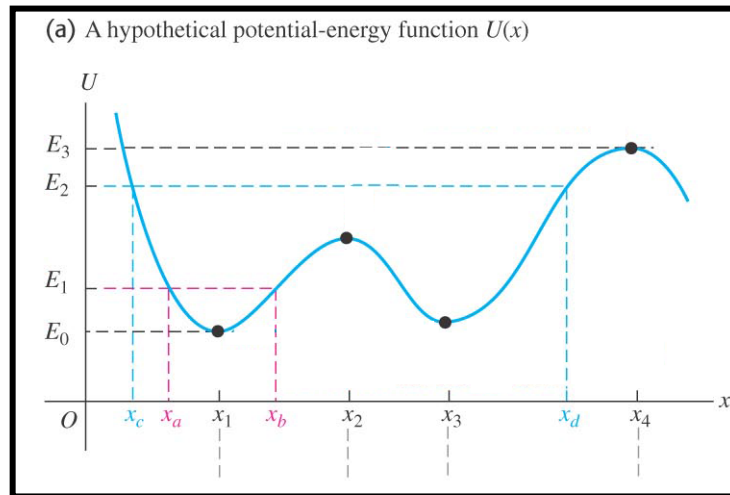
1. a. Sketch the potential energy function near a point of neutral equilibrium

- b. Give an example of an object in neutral equilibrium.

2. Mark where the gradient of U is positive, negative, and zero



3. Mark where the force is to the right, to the left, or zero.



4. Identify where the particle in the potential above must be and describe its possible motion in the scenarios described below.

a. Total energy $E > E_3$.

b. Total energy $E = E_1$.

c. Total energy $E = E_0$.

d. Total energy $E < E_0$.