

Kinetic Energy

Kinetic Energy depends on _____

Formula:

Kinetic Energy Practice Problem

A 1400 kg car is moving at 10 m/s. Calculate the kinetic energy of the car.



Potential Energy

Potential Energy is _____**Gravitational potential energy** is _____**Gravitational potential energy** _____

Formula:

Potential Energy Practice problem

A 1400 kg roller coaster is moved to the top of a track that is 100 m above the lowest part of the track. What is the GPE of the coaster?



Name: _____

Intro to Kinetic and Potential Energy Lecture Worksheet

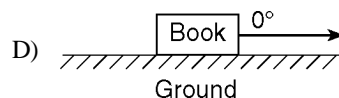
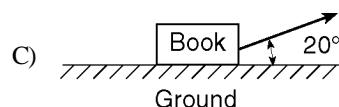
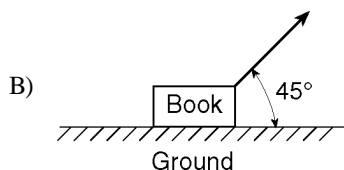
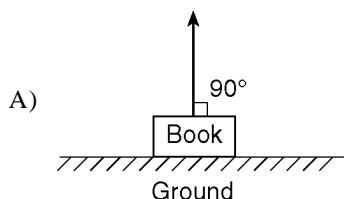
- 1) An object weighing 15 newtons is lifted from the ground to a height of 0.22 meter. What is the approximate increase in the object's gravitational potential energy?
 A) 0.34 J B) 32 J C) 3.3 J D) 310 J

- 2) A 45.0-kilogram boy is riding a 15.0-kilogram bicycle with a speed of 8.00 meters per second. What is the combined kinetic energy of the boy and the bicycle?

- 3) A 60.0-kilogram runner has 1,920 joules of kinetic energy. At what speed is she running?

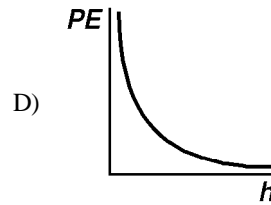
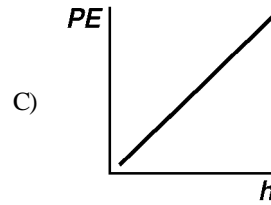
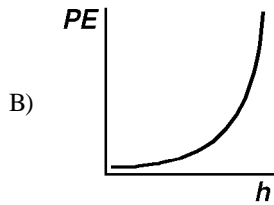
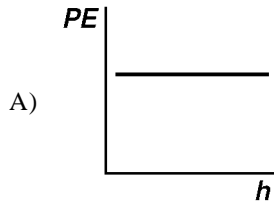
- 4) An object moving at a constant speed of 25 meters per second possesses 450 joules of kinetic energy. What is the object's mass?

- 5) A 1.0-kilogram book resting on the ground is moved 1.0 meter at various angles relative to the horizontal. In which direction does the 1.0-meter displacement produce the *greatest* increase in the book's gravitational potential energy?



- 6) What is the gravitational potential energy with respect to the surface of the water of a 75.0-kilogram diver located 3.00 meters above the water?

- 7) Which graph *best* represents the relationship between gravitational potential energy (PE) and height (h) above the ground for an object near the surface of Earth?



- 8) A 6.8-kilogram block is sliding down a horizontal, frictionless surface at a constant speed of 6.0 meters per second. The kinetic energy of the block is approximately