

Directions: Complete this handout according to information learned in the lecture

Work and Potential Energy Theorem

Work done to _____

Equation:

For Example:

A 1800 kg coaster is pulled to the top of a 110 m track by work of the motor on the coaster.

- Assuming no friction, how much work is done by the motor?
- What is the change in potential energy of the coaster?



Work and Kinetic Energy Theorem

-The net Work done _____

- The Net work done _____

Equation

For Example



- A 1200 kg car is traveling and accelerates from 10 m/s to 15 m/s.
 - Determine the change in kinetic energy to accomplish this change in speed.
 - How much net work is done to change the speed of the car?
 - What net force must be applied to change the car's speed if this occurred over 10m?

Practice Problems

For Each problem show the equations, substitution with units and circle your final answer to receive credit.

1. A weightlifter raises a barbell set from ground level to a height of 1.2 meters. If he does 10,000 joules of work, what is the mass of the barbell set?



2. Net work of 45,000 joules is required to bring a skidding car to rest. If the car has a mass of 1400 kg, how fast was it traveling before it began skidding?



3. A vertical rise amusement park ride lifts a 1000 kg cart to the top. If the motor does 500,000 joules of work, what is the height of the tower? Assume no friction.

