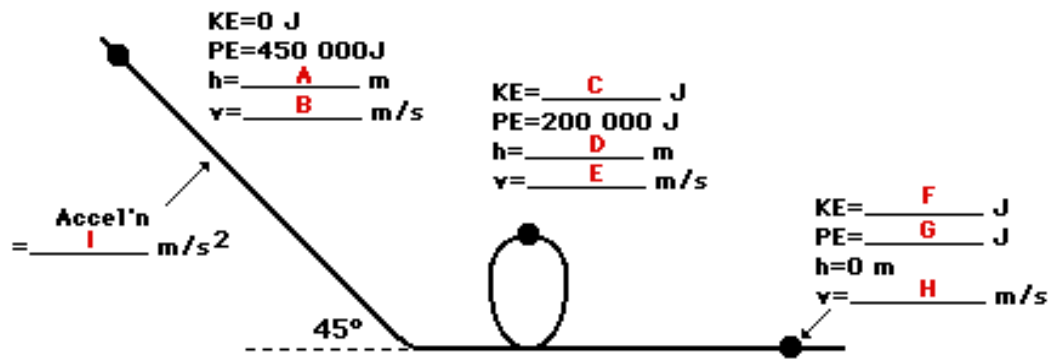Name _____   Physics

Conservation of Energy HW

Directions: You earn credit for this assignment by the following:

- All work is shown; including formulas and units
- The answers are correct. Each correct answer is worth a specific amount of extra credit

1. Use the law of conservation of energy (assume no friction) to fill in the blanks at the various marked positions for a 1000-kg roller coaster car with passengers.
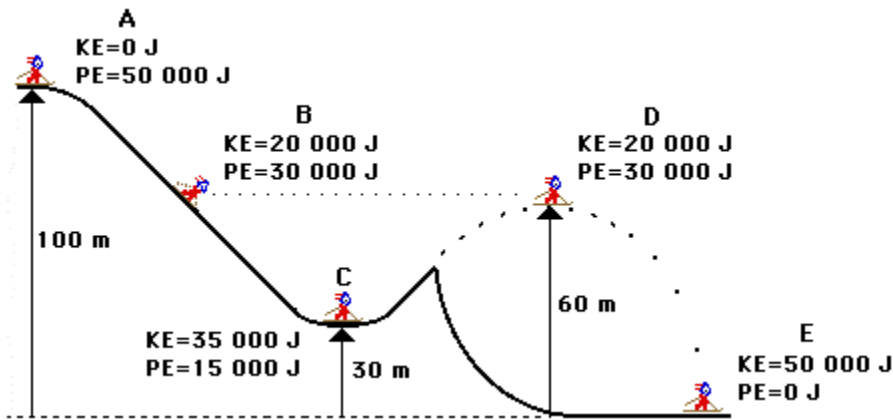

KE=0 J
PE=450 000J
h=____A____ m
v=____B____ m/s

KE=____C____ J
PE=200 000 J
h=____D____ m
v=____E____ m/s

KE=____F____ J
PE=____G____ J
h=0 m
v=____H____ m/s

Accel'n
=____I____ m/s²

45°

A

B

C

D

E

F

G

H

2. Determine Li Ping Phar's (m=50 kg) speed at locations B, C and D

A
KE=0 J
PE=50 000 J

B
KE=20 000 J
PE=30 000 J

D
KE=20 000 J
PE=30 000 J

100 m

C
KE=35 000 J
PE=15 000 J

30 m

60 m

E
KE=50 000 J
PE=0 J

B

C

D

3.An object which weighs 10 N is dropped from rest from a height of 4 meters above the ground. When it has free-fallen 1 meter its total mechanical energy with respect to the ground is?

4. During a certain time interval, a 20-N object free-falls 10 meters. The object gains _____ Joules of kinetic energy during this interval.