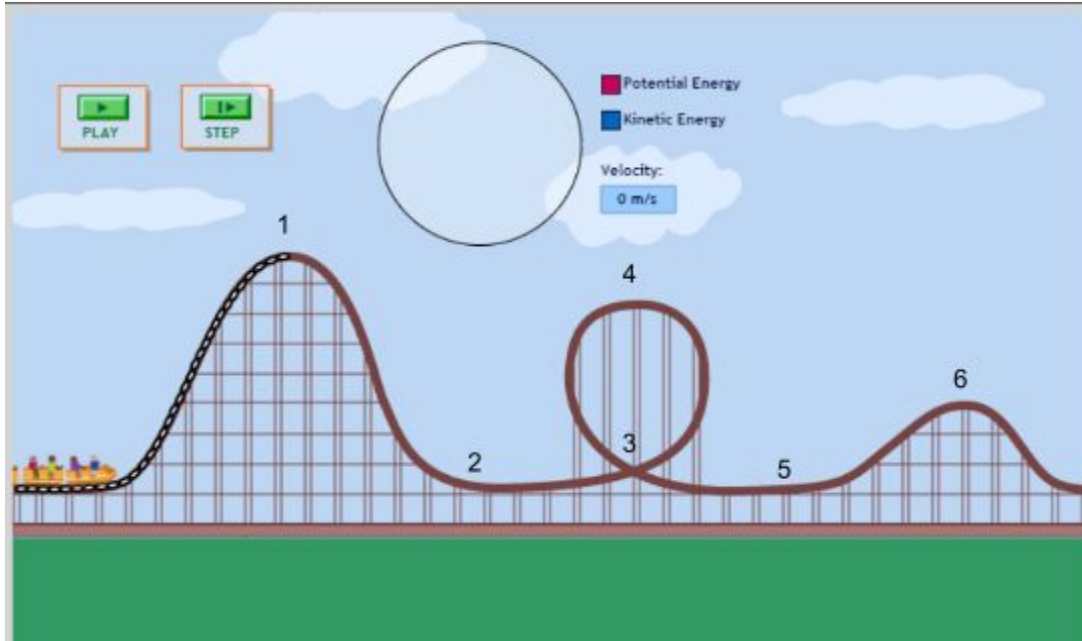


Marble Coaster and Conservation of Energy

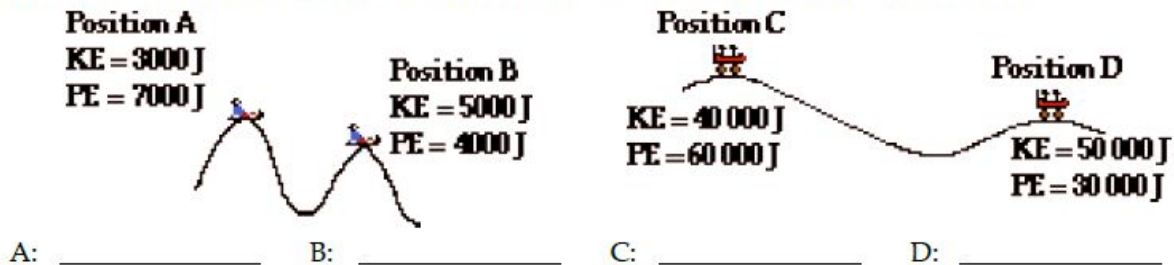
Roller Coaster



What do you expect the energy to be? What ideas do you have to support your answer?	What was it actually? Explain your reasoning.
1. Potential high/low Kinetic high/low	
2. Potential high/low Kinetic high/low	
3. Potential high/low Kinetic high/low	
4. Potential high/low Kinetic high/low	
5. Potential high/low Kinetic high/low	
6. Potential high/low Kinetic high/low	

The Law of Conservation of Energy:

Determine the total mechanical energy (TME) of the objects at positions A, B, C and D.



Read the following descriptions and indicate whether the objects' KE, PE and TME increases, decreases or remains the same (=). If it is impossible to tell, then answer ???.

- a. A marble begins at an elevated position on top of an inclined ruler and rolls down to the bottom of the ruler.

KE: ↑ ↓ = ??? PE: ↑ ↓ = ??? TME: ↑ ↓ = ???

- b. A marble is rolling along a level table when it hits a note card and slides to a stop.

KE: ↑ ↓ = ??? PE: ↑ ↓ = ??? TME: ↑ ↓ = ???

- c. A cart is pulled from the bottom of an incline to the top of the incline at a constant speed.

KE: ↑ ↓ = ??? PE: ↑ ↓ = ??? TME: ↑ ↓ = ???

- d. A physics student runs up a staircase at a constant speed.

KE: ↑ ↓ = ??? PE: ↑ ↓ = ??? TME: ↑ ↓ = ???

- e. A force is applied to a root beer mug to accelerate it from rest across a level countertop.

KE: ↑ ↓ = ??? PE: ↑ ↓ = ??? TME: ↑ ↓ = ???

- f. A pendulum bob is released from rest from an elevated position and swings to its lowest point.

KE: ↑ ↓ = ??? PE: ↑ ↓ = ??? TME: ↑ ↓ = ???

- g. A car skids from a high speed to a stopping position along a level highway.

KE: ↑ ↓ = ??? PE: ↑ ↓ = ??? TME: ↑ ↓ = ???