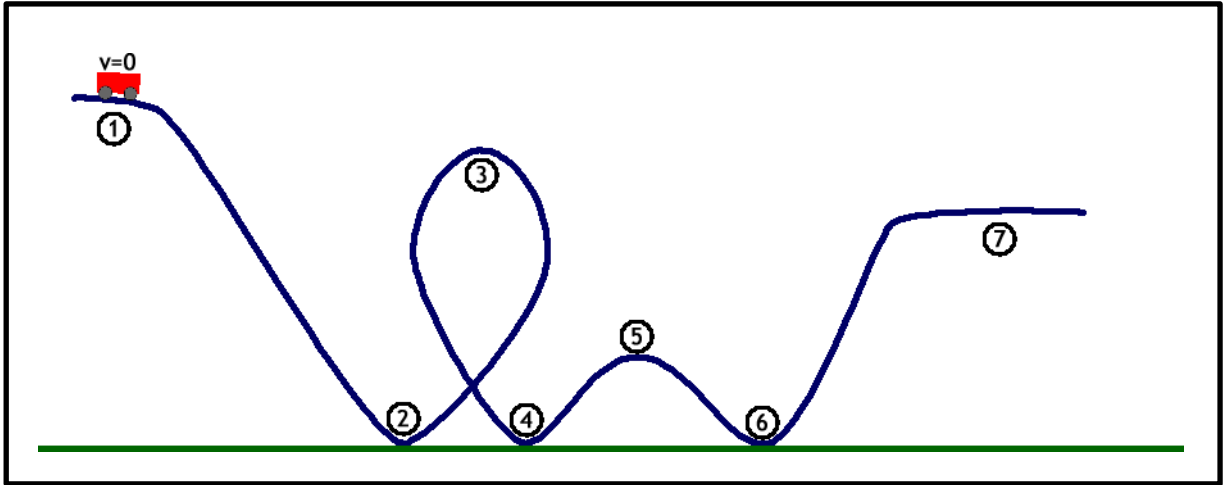


# Roller Coaster

(Assume No Friction)



- 1) Where is the total energy the greatest?
- 2) Where does the roller coaster have both P.E. and K.E.?
- 3) Where would the K.E. be the greatest? Why?
- 4) Where is the P.E. the smallest? Why?
- 5) Where is the K.E. the smallest? Why?
- 6) Where is the P.E. the greatest? Why?
- 7) Describe what is happening in terms of energy.
- 8) How would friction affect the ride in terms of energy and the concept of energy conservation?

## Firecracker



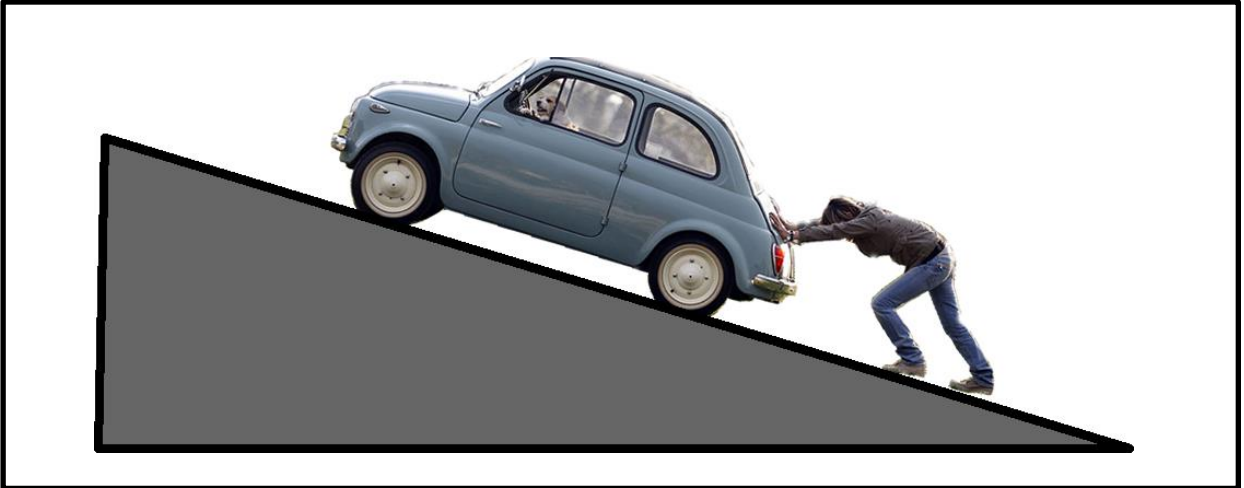
Picture #1



Picture #2

- 1) What type of energy does the firecracker have in picture #1?
- 2) What types was the energy in #1 transformed into?
- 3) Where was the total energy the greatest?
- 4) Eventually, all the pieces stop moving, where did the initial energy go?
- 5) Describe what is happening in terms of energy?

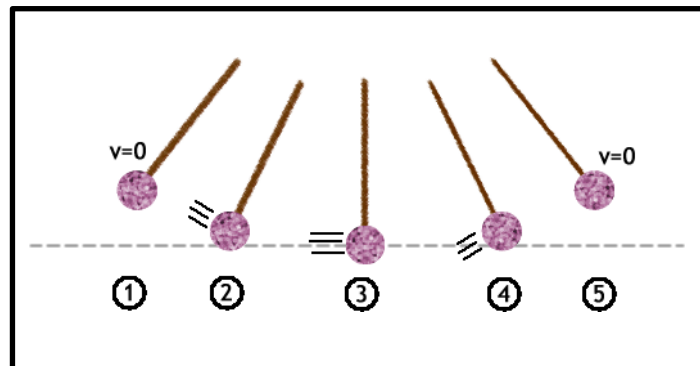
## Pushing a Car up a Ramp



- 1) How many types of energy can you name in this picture? (I can think of 4)
- 2) Where is all the energy in the picture coming from?
- 3) Describe what is happening in terms of energy?

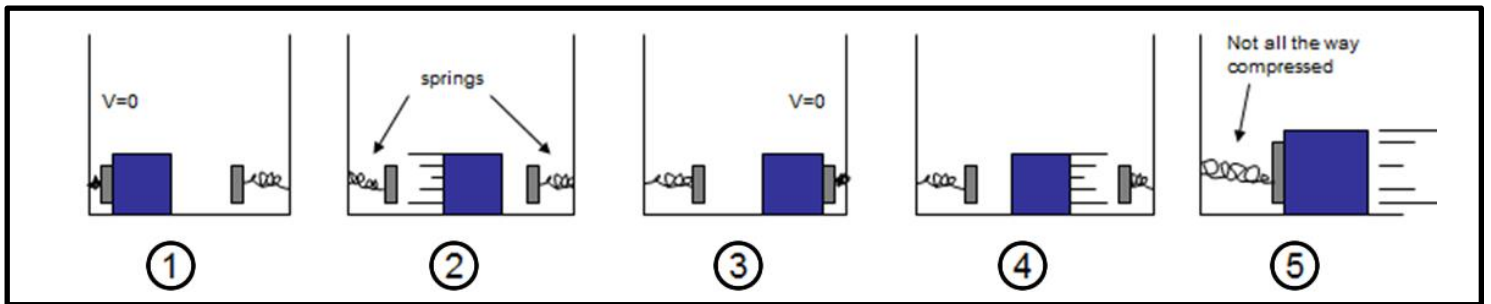
# Pendulum

(Assume no Friction)



- 1) Where is the K.E. the greatest? Why?
- 2) Where is the K.E. the smallest? Why?
- 3) Where does the bob have both K.E. and P.E.?
- 4) Where is the P.E. the greatest? Why?
- 5) Where is the P.E. the smallest? Why?
- 6) Describe what is happening in terms of energy.
- 7) If friction were present, explain why the pendulum would never return to its original height.

## Spring Slide (Assume no friction)



- 1) Where is the K.E greatest? Why?
- 2) Where is the K.E smallest? Why?
- 3) What forms of energy does the block have in picture # 5?
- 4) Where is the elastic P.E greatest? Why?
- 5) Where is the elastic P.E smallest? Why?
- 6) Where is total energy the greatest?
- 7) Where is total energy the smallest?
- 8) Describe what is happening in terms of energy.