**Worksheet 1: Reference Diagram**

Initial potential energy

Next potential energy max, note that it is lower than the initial point.

H

5

H

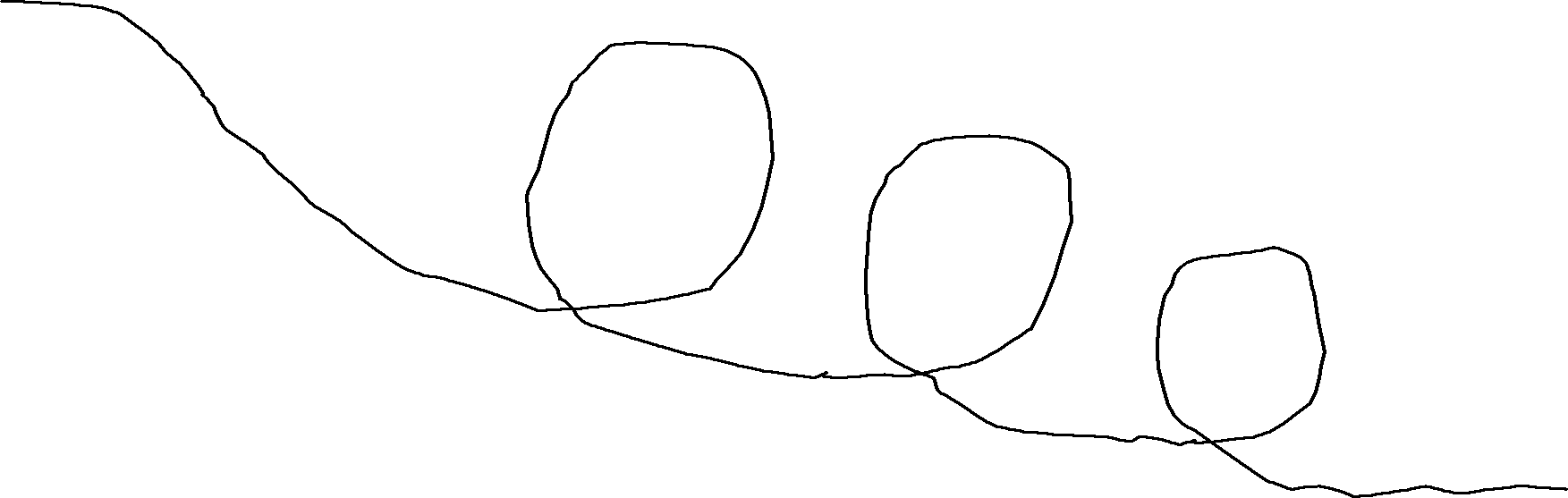
3

H

2

H

4



Kinetic

energy

point A

H

1

Kinetic

energy

point B

Ideal Kinetic Energy at point A KE = PE = (mass) x (H1 – H2) x (gravity)

Ideal Kinetic Energy at point B KE = PE at H3 + KE at H3

= (mass) x (H3 – H4) x (gravity) + (mass) x (velocity at H3 )2 / 2

If the marble has little or no velocity at H3 then the kinetic energy is negligible and the kinetic energy at point B is a function of the potential energy, or height difference from the top of the previous loop-de-loop to the start of the next one.