**Initial conditions:**

*Location:*

x (0)=0 ,

y (0)=0,

*Velocity:*

x (0) = V m/s, (arbitrary number, say 20 m/s for the purposes of working the equation out)

y (0) = V m/s,

*Angle of motion:* α,

*Co-efficient of restitution:* ε,

*Acting Forces:*

Gravity (g),

& Air resistance (λ)

*Ball Parameters:*

Mass: m

Diameter: D

λ = 0.06;

ε = 0.56;

D = 1;

m = 0.5;

g (Gravity assumed to be earth-like) = - 1.0 G;

mg (mass of the ball x gravity) = - 0.5;