

Sample Data:

t= 0 cart.p= <0.556, 0.08, 0>

t= 0.01 cart.p= <0.552, 0.08, 0>

t= 0.02 cart.p= <0.548, 0.08, 0>

t= 0.03 cart.p= <0.544, 0.08, 0>

t= 0.04 cart.p= <0.54, 0.08, 0>

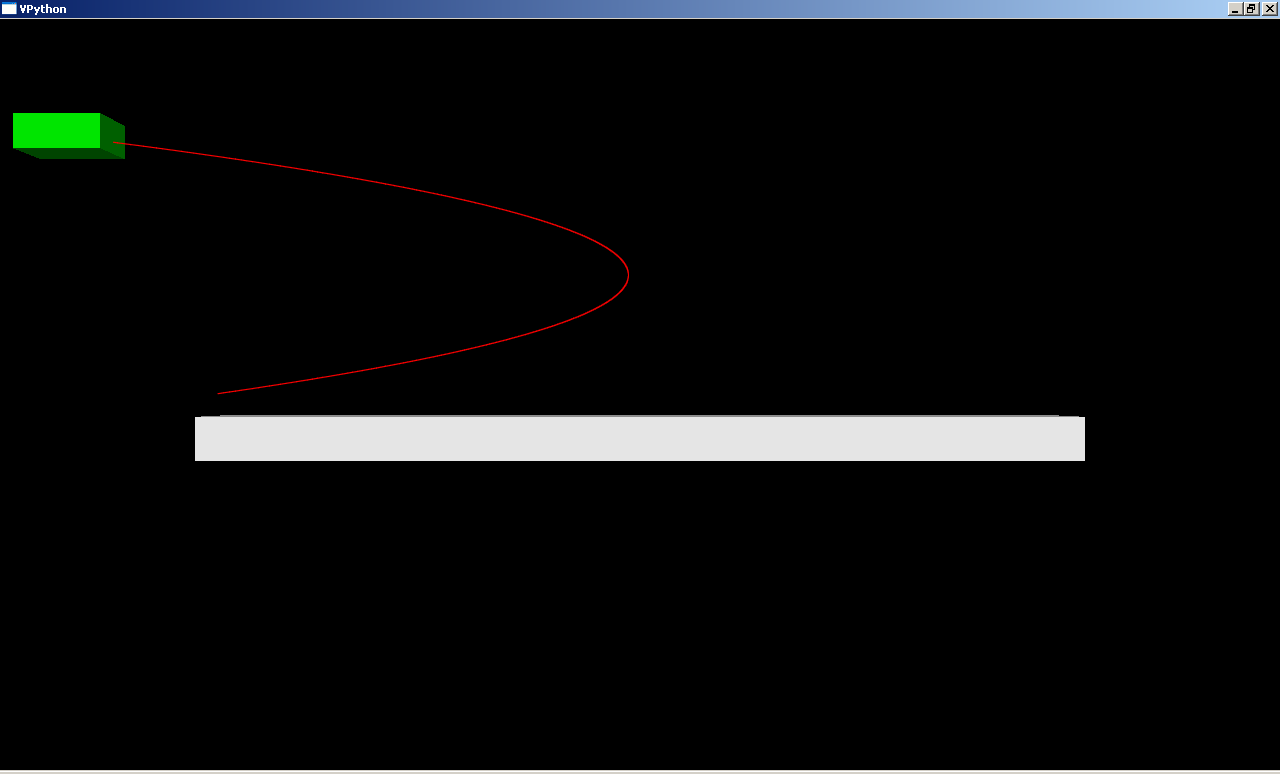
t= 0.05 cart.p= <0.536, 0.08, 0>

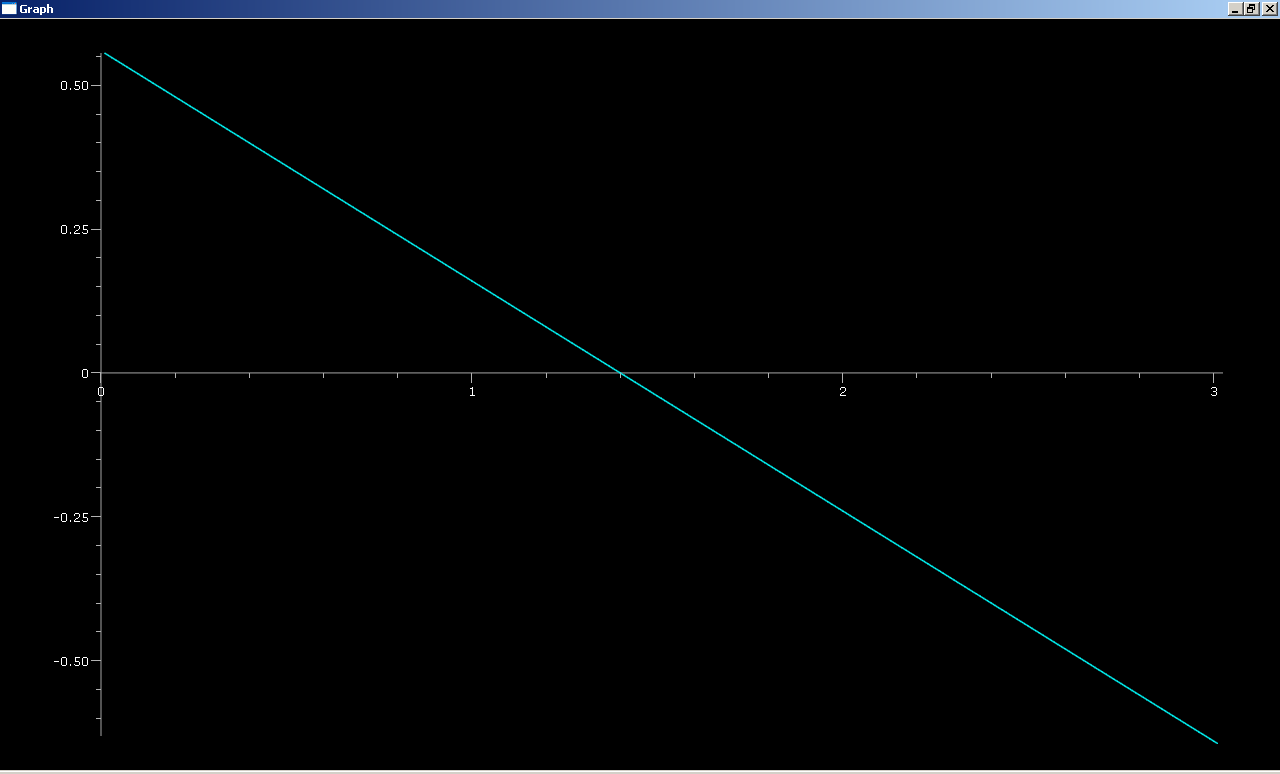
t= 0.06 cart.p= <0.532, 0.08, 0>

t= 0.07 cart.p= <0.528, 0.08, 0>

t= 0.08 cart.p= <0.524, 0.08, 0>

t= 0.09 cart.p= <0.52, 0.08, 0>





Questions:

1)

Initial p: t= 2.81 cart.p= <-0.568, 0.08, 0>

Final p: t= 2.82 cart.p= <-0.572, 0.08, 0>

Change in p=pf-pi=<-.004,0,0> kg m/s

2)

Pf= pi + Fnet\*deltat

Fnet\*deltat=<-.004,0,0> Nm

3) Yes. The two values are equal. Impulse is equal to change in momentum.

4)The cart is travelling on a horizontal surface, so the momentum, along with the velocity vector, only changes in the x direction.