20100104 0001

Key

A 120.0 kg orange ball is dropped out of an airplane. The ball falls for 10.00 seconds.

A) Find final velocity in m/s 98 m/s

B) Find initial velocity in light years/decade 0 ly/dec

C) Find height in meters of initial drop. 490m

D) Convert 120.0 kg into pounds 264 lbs

367.5 m

E) Find altitude of ball after 5.000 sec. of falling

A)
$V_f = V_i + at$
$= (9.8 \frac{m}{s^2})(10s)$
$V_f = 98 \frac{m}{s}$

B) $V_i = 0$

C) $\Delta y = V_i t + \frac{1}{2} a t^2$
$= \frac{1}{2}(9.8 \frac{m}{s^2})(10s)^2$
$= 4.9(100)$
$= 490m$

120 / 2.2 / 240 / 240 / 2640

4.9 / 25 / 245 / 98 / 122.5

D) $\frac{120 kg}{1} \cdot \frac{2.2 lbs}{1 kg} = 264 lbs$

E) $\Delta y = V_i t + \frac{1}{2} a t^2$
$= \frac{1}{2}(9.8)(5)^2$
$= 4.9(25)$
$= 122.5$
$Alt = 490 - 122.5$
$= 367.5$