Question #27624

A particle is projected in vertically upward directions. find distances travelled by the particle in last second in upward motion?

Solution:
An equation of equally decelerated motion is:
$S = v_1 t - \frac{1}{2} g t^2$ were v_1 is the velocity of the particle on the beginning of last second
Such as
$v = v_1 - gt$ the final velocity is equal to zero
$v_1 = gt$
$S = gt * t - \frac{1}{2} g t^2 = \frac{1}{2} g t^2$

The distance is:

$S = \frac{1}{2} g t^2$, were g is the acceleration due the gravity, t is the time (1 sec)

$S = \frac{1}{2} * 9.8 * 1 = 4.9\ m$

Answer: 4.9 m.