① Given,

Displacement = (-50m)

$u = 10 m/s$

a) $v^2 = u^2 - 2gs$

$= (10m)^2 - 2(9.8 m/s^2)(-50m)$

$v^2 = 1.08 \times 10^3 m^2/s^2$

$v = \sqrt{1.08 \times 10^3 m^2/s^2}$

$= 32.9 m/s$

$v = (-32.9 m/s)$

b) $v = u - gt$

$t = \frac{u - v}{g}$

$= \frac{(10 m/s - (-32.9 m/s))}{9.80 m/s^2}$

$= \frac{42.9 m/s}{9.8 m/s^2}$

$= 4.38 s.$

Homework :-

(2) $s = ut + \frac{1}{2} gt^2$

$u = 0$

$t = 5$

$g = 9.8$

$s = 0 \times 5 + \frac{1}{2}(9.8)(5)^2$

$= 9.8 \times \frac{25}{2}$

$= 122.5 \text{ m}$

ii) $S_{(nth)} = u + \frac{g}{2}(2t - 1)$

$= 0 + \frac{1}{2}(9.8)(2 \times 5 - 1)$

$= \frac{9.8}{2}(9)$

$= 44.1 \text{ m}$