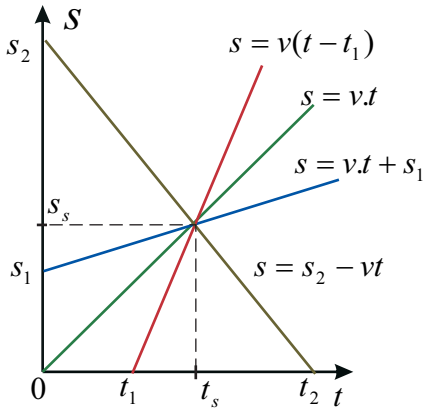
Enakomerno gibanje

Satcitananda d.o.o.
Inštrukcije Riki
041 412 998
inštrukcije.net

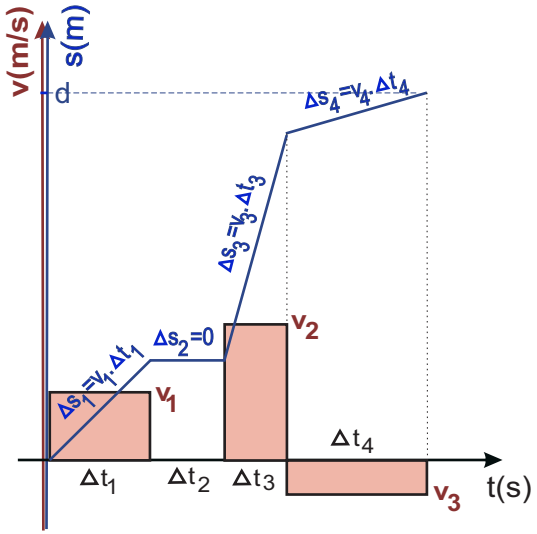
Grafi poti od časa



Narišemo primeru ustrezen graf linearne funkcije poti s v odvisnosti od časa t.

Če želimo npr. izračunati čas t_s in pot s_s srečanja, izenačimo ustrezni enačbi.

Odsekoma enakomerno gibanje



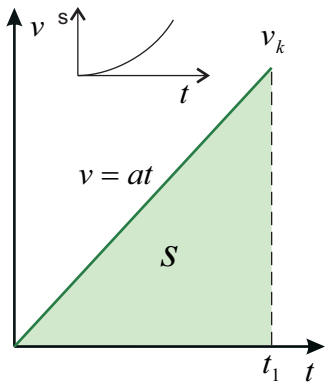
skupna razdalja: $d = \Delta s_1 + \Delta s_2 + \Delta s_3 + \Delta s_4$

povprečna hitrost: $\bar{v} = \dfrac{d}{t_s}$

skupni čas: $t_s = \Delta t_1 + \Delta t_2 + \Delta t_3 + \Delta t_4$

Enakomerno pospešeno gibanje

Enakomerno pospešeno



$v_k = at_1$

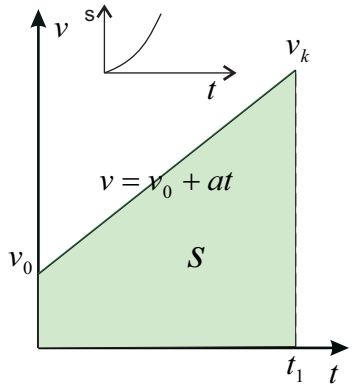
$s = \dfrac{t_1 . v_k}{2} = \dfrac{a.t_1^2}{2}$

s = ploščina pod grafom v(t)

$t_1 = \sqrt{\dfrac{2s}{a}}$

$v_k = a\sqrt{\dfrac{2s}{a}} = \sqrt{2sa}$

Enakomerno pospešeno z začetno hitrostjo



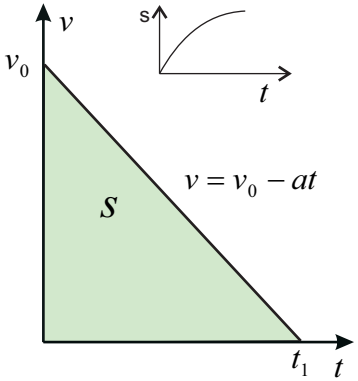
$v_k = v_0 + at_1$

$s = v_0 t + \dfrac{at^2}{2}$

s = ploščina pod grafom v(t)

$v^2 = v_0^2 + 2as$

Enakomerno pojemajoče



$s = v_0 t - \dfrac{at^2}{2}$

s = ploščina pod grafom v(t)

$t_1 = \dfrac{v_0}{a}$

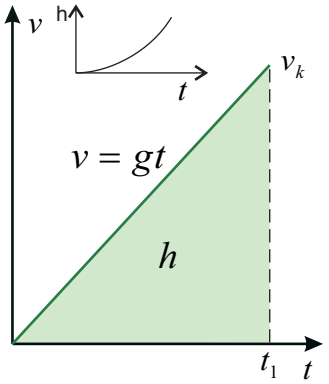
$s_{max} = \dfrac{v_0 t_1}{2} = \dfrac{v_0^2}{2a}$

$v_0 = \sqrt{2as_{max}}$

$v^2 = v_0^2 - 2as$

Navpični met – prosti pad

Prosti pad



$v_k = gt_1$

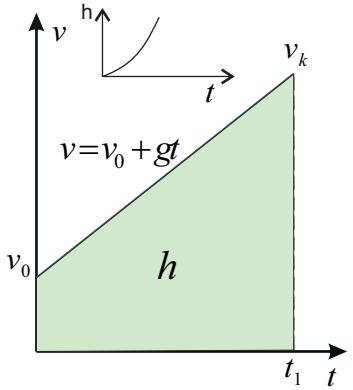
$h = \dfrac{v_k t_1}{2} = \dfrac{g t_1^2}{2}$

h = ploščina pod grafom v(t)

$t_1 = \sqrt{\dfrac{2h}{g}}$

$v_k = g\sqrt{\dfrac{2h}{g}} = \sqrt{2hg}$

Met navzdol



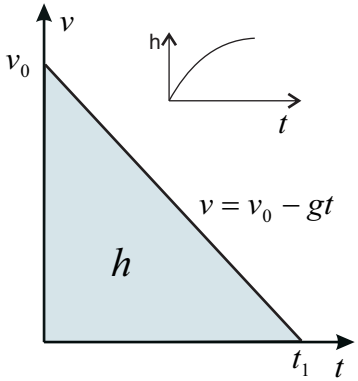
$v_k = v_0 + gt_1$

$h = v_0 t + \dfrac{gt^2}{2}$

h = ploščina pod grafom v(t)

$v^2 = v_0^2 + 2gh$

Navpični met



$h = v_0 t - \dfrac{gt^2}{2}$

s = ploščina pod grafom v(t)

$t_1 = \dfrac{v_0}{g}$

$h_{max} = \dfrac{t_1 v_0}{2} = \dfrac{v_0^2}{2g}$

$v_0 = \sqrt{2gh_{max}}$

$v^2 = v_0^2 - 2gh$