$\ln x = \frac{1}{x}$ $x^2 = 2x^{2-1}$ $2+x^2 = 2x^{2-1}$ $2x^2 = 4x^{2-1}$ | $\dot{x} = 1$ | $\sqrt{x} = \frac{1}{2\sqrt{x}}$ $(\dot{x})$ | $\sin x = \cos x$ $\cos x = -\sin x$ | $\sin(2x) = 2\sin(2x)$ $\cos(2x) = 2\cos(2x)$

INTEGRIRANJE

$\int e^x = e^x + c$ $\int x^2 = \frac{x^3}{3} + c$ | $\int \frac{1}{x} = \ln x$

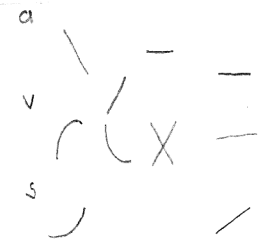
ZBRAJANJE - ELIPSA

$\frac{(x-p)^2}{a^2} + \frac{(y-q)^2}{b^2} = 1$ $x_{1,2} = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$ | $(x-1)^2+(y-1)^2 = r^2$ KRUŽNICA

$S(p,q)$ $T_1(x_1,y_1); T_2(x_0,y_0)$ $y-y_0 = A(x-x_0)^2$ | $\cos t\,dx = -t\sin t$ $\sin t\,dx = t\cos t$

$v = \int a\,dt$ $v = v_0 + at$ $v^2 - v_0^2 = 2as$ $v_{sr} = \frac{s_{uk}}{t_{uk}}$

$s = \int v\,dt$ $s = s_0 + v_0 t + \frac{at^2}{2}$ $(s_{x-y} = s_y - s_x)$



PREBACITI U RAD AKO RAČ. POLOŽAJ SA SIN I COS

AKO JE a = KONST. = a_N, $a_T = \emptyset$

$\vec{r} = xi + yj$ - radij vekt. položaja

$v_x = \dot{x}$ $v = \sqrt{v_x^2 + v_y^2}$

$v_y = \dot{y}$

$a_x = \ddot{x}$ $a = \sqrt{a_x^2 + a_y^2}$

$a_y = \ddot{y}$

$a_T = \frac{dv}{dt}$

$a_N = \sqrt{a^2 - a_T^2} = \frac{v^2}{\rho} = \omega^2 r$

$ds = \sqrt{dx^2 + dy^2} \rightarrow \int$ (TRAJEKTORIJA TJ. PUTANJA)

$s = \ldots$

KUT (rad)

$\varphi = \varphi_0 + \omega_0 t + \frac{1}{2}\varepsilon \cdot t^2$ $\varphi = 2\pi N$ | n - okr/s | N - okr

$\varphi = \int \omega\,dt$

KUTNA BRZINA (rad/s)

$\omega = \omega_0 + \varepsilon t$ $\omega = 2\pi n$

$\omega = \frac{d\varphi}{dt} = \dot{\varphi} = \int \varepsilon\,dt$

$\omega^2 - \omega_0^2 = 2\varepsilon\varphi$

- ω i ε - isti predznak → ubrzano
- razlučiti → usporeno

- brzina u smjeru kutne brzine rotacije

$a_t = (konst.)$

$v = v_0 + a_t \cdot t$

KUTNO UBRZANJE (rad/s²)

$\varepsilon = \frac{d\omega}{dt} = \dot{\omega} = \frac{d^2\varphi}{dt^2} = \ddot{\varphi}$

prijenosno - rotacija, relativno - pravac/kružnica

$v = \omega \cdot r = \frac{ds}{dt} = \int a_T\,dt$

$\vec{v}_a = \vec{v}_p + \vec{v}_r$ $v_a = \sqrt{v_p^2 + v_r^2 + 2v_p v_r \cdot \cos\delta}$

$\vec{a} = \vec{a}_N + \vec{a}_T$ $a = \sqrt{a_N^2 + a_T^2}$

$\vec{a}_a = \vec{a}_p + \vec{a}_r + \vec{a}_{cor} = \vec{a}_{pN} + \vec{a}_{pT} + \vec{a}_{rN} + \vec{a}_{rT} + \vec{a}_{cor}$

$a_N = \frac{v^2}{\rho} = \omega^2 r$ $(\rho = r = R)$ POLUMJER PUT, OD OSI ROTACIJE

$\vec{a}_{cor} = 2\vec{\omega}_p \cdot \vec{v}_r$ (90° na $\vec{v}_r$, u smjeru ω_p)

$a_{cor} = 2\omega_p \cdot v_r$

$a_T = \varepsilon \cdot r = \frac{dv}{dt}$ (ako je ω = konst. $\rightarrow a_T = \emptyset$)

$\vec{a}_a = \sqrt{a_x^2 + a_y^2}$

$s = r \cdot \varphi$ (kružnica)