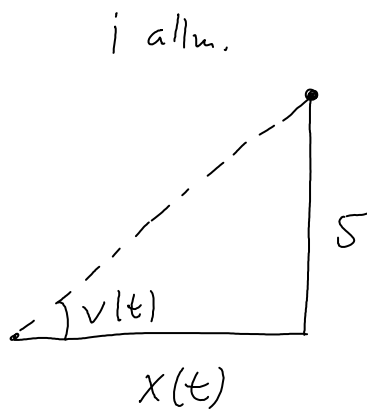
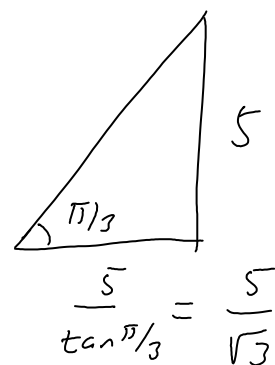


Figur 1

vid  $t = t_0$ 

Vet :  $x(t) = -450$  ,  $x(t_0) = \frac{5}{\sqrt{3}}$  ,  $v(t_0) = \frac{\pi}{3}$

Sökes :  $v'(t_0)$ 

Från figur

$$\tan v(t) = \frac{5}{x(t)}$$

Obs  $D(\tan x) = \frac{1}{\cos^2 x}$

Derivera m.a.p  $t$ 

$$\frac{1}{\cos^2 v(t)} \cdot v'(t) = -\frac{5}{x(t)^2} \cdot x'(t)$$

 $t = t_0$  ger

$$\frac{1}{\cos^2 \frac{\pi}{3}} \cdot v'(t_0) = -\frac{5}{\left(\frac{5}{\sqrt{3}}\right)^2} \cdot (-450)$$

$$\left(\cos \frac{\pi}{3} = \frac{1}{2}\right)$$

$$\cos^2 \frac{\pi}{3} \quad v(t_0) = - \frac{(-950)}{\left(\frac{5}{\sqrt{3}}\right)^2}$$

$\Leftrightarrow$

$$\frac{1}{\left(\frac{1}{2}\right)^2} \cdot v'(t) = 270$$

$\Leftrightarrow$

$$v'(t_0) = \frac{270}{4} = \underline{\underline{67,5 \text{ rad/h}}}$$

67,5