Stel $\omega(t) =$ de hoeksnelheid (in $\dfrac{rad}{min}$) van de draaiende schijf, op tijdstip t (in min).

$$\frac{d\omega}{dt} \sim \omega^2 \qquad \left(t=0, \; \omega = 100 \cdot \frac{2\pi \; rad}{min} \right)$$

en

$$\left(t=1, \; \omega = 60 \cdot \frac{2\pi \; rad}{min} \right)$$

$$\Downarrow$$

$$\frac{d\omega}{dt} = k \cdot \omega^2$$

$$\frac{d\omega}{\omega^2} = k \cdot dt$$

$$\int \frac{d\omega}{\omega^2} = \int k \cdot dt$$

$$\frac{-1}{\omega} = k \cdot t + c$$

$$\omega = \frac{-1}{k \cdot t + c}$$

k en c bepalen met de twee gekende punten:

$$200\pi = \frac{-1}{c} \Rightarrow c = -\frac{1}{200\pi}$$

$$120\pi = \frac{-1}{k - \dfrac{1}{200\pi}} \Rightarrow k - \frac{1}{200\pi} = -\frac{1}{120\pi}$$

$$\Rightarrow k = \frac{1}{200\pi} - \frac{1}{120\pi} = \frac{-1}{300\pi}$$

$$\Rightarrow \omega = \dfrac{-1}{\dfrac{-1}{300.\pi}.t - \dfrac{1}{200.\pi}}$$

$$\Rightarrow \omega = \dfrac{1}{\dfrac{t}{300\pi} + \dfrac{1}{200\pi}}$$

teller en noemer maal 600π :

$$\omega = \dfrac{600\pi}{2.t + 3} \quad \dfrac{rad}{min}$$