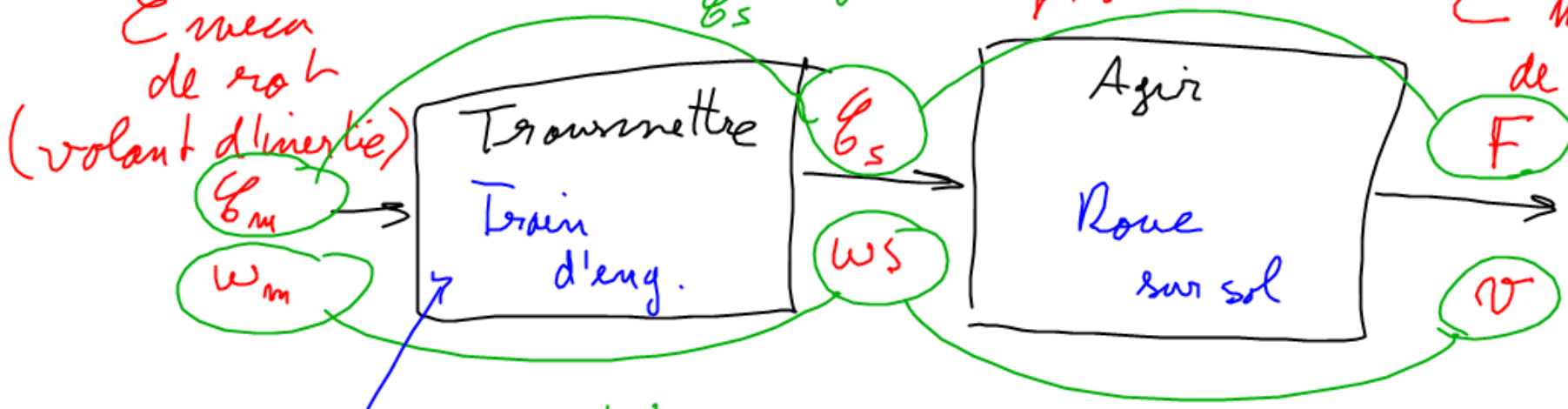
$r = \frac{C_e}{C_s} \cdot \eta$ $\quad C_s - C_{pertes} = F \cdot R$



$r = \frac{\omega_s}{\omega_e}$ $\quad V = \omega \cdot R$

$$r = (-1)^k \frac{\prod Z_{menantes}}{\prod Z_{menées}}$$

tr/min
rad/s
$\omega = \pi \cdot N / 30$

$$\eta = \frac{P_s}{P_e} \qquad \eta = \frac{P_u}{P_a}$$

$$\eta = \frac{C_s \cdot \omega_s}{C_e \cdot \omega_e}$$

$$\eta = \frac{C_s}{C_e} \cdot r \qquad r = \frac{C_e}{C_s} \cdot \eta$$

1) $\| \overrightarrow{V_{A\ roue/veh}} \| = \omega_{roue/veh.} \cdot R$

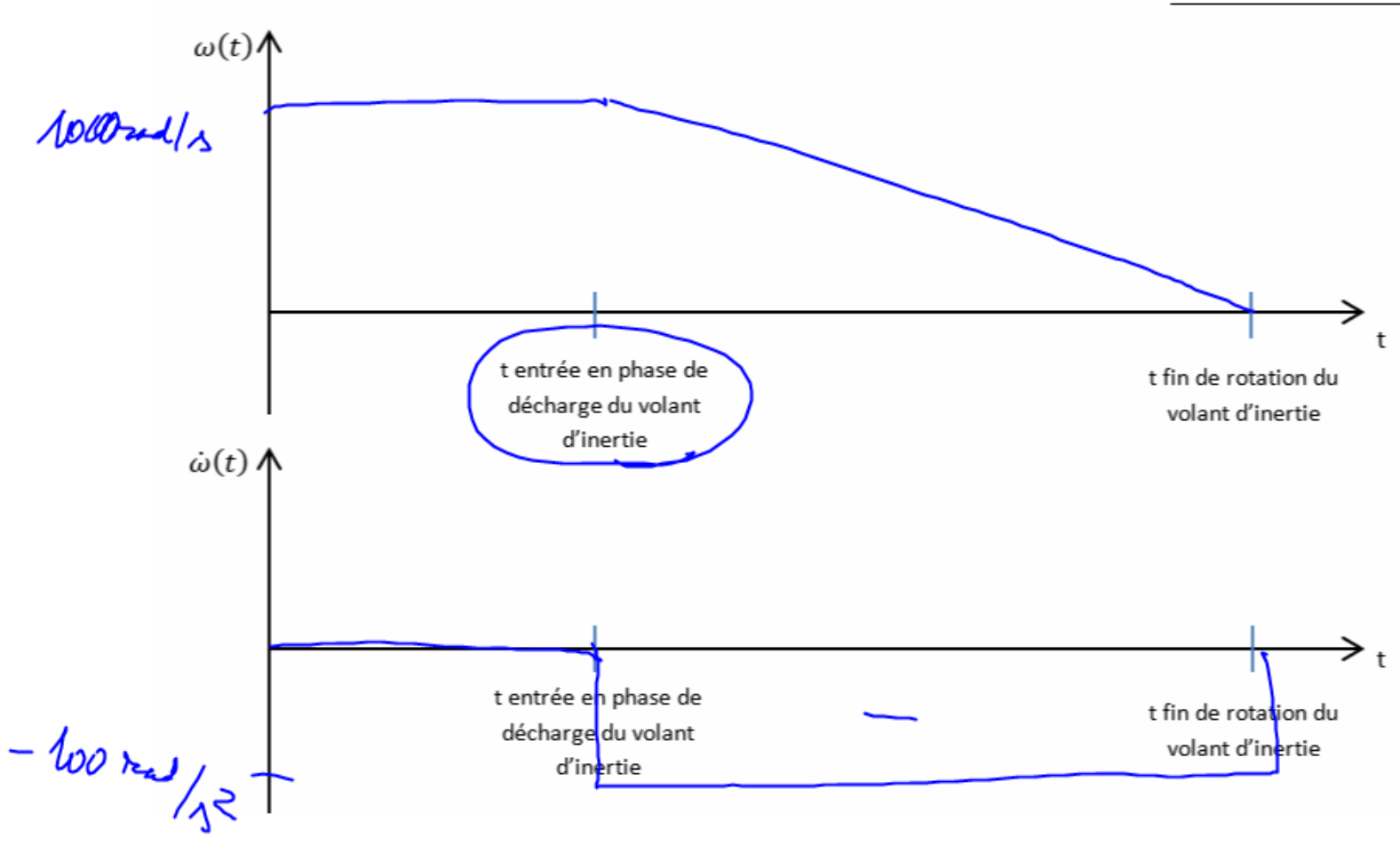
$\omega_{r/v} = \dfrac{V_A}{R}$ $\qquad \omega_{r/v} = \dfrac{1}{\left(\frac{20.10^{-3}}{2}\right)} = 100 \text{ rad/s}$

2) $r = \dfrac{Z_1 \cdot Z_3 \cdot Z_5}{Z_2\ Z_4 \cdot Z_6}$ $\qquad N_{r/v} = \dfrac{30.100}{\pi} \simeq 955 \text{ tr/min}$

$= \dfrac{26.28.30}{14.13.12} \simeq 10$

3) $r = \dfrac{N_{volant}}{N_{roue}}$ $\qquad N_{volant} = r.N_{roue}$ $\qquad N_{volant} = 10.955 = 9550 \text{ tr/min}$

$N_{volant} = 1000 \text{ rad/s}$


$\omega(t)$
1000 rad/s
t entrée en phase de décharge du volant d'inertie
t fin de rotation du volant d'inertie
t
$\dot{\omega}(t)$
t entrée en phase de décharge du volant d'inertie
t fin de rotation du volant d'inertie
t
- 100 rad/s²

à $t = t_0 = 0_s$: $\theta_0 = 0_{rad}$ $\omega_0 = \underbrace{1000\ rad/s}_{Volant}$ $\omega = -100\ rad/s^2$

à $t = t_f =$: $\theta_f =$ $\omega_f = 0\ rad/s$

éq de mvt : $\omega(t) = -100 . t + 1000$

$$\theta(t) = \frac{1}{2}(-100)\, t^2 + 1000 . t$$

à $t = t_f$: $(\omega_f =)$ $0 = -100 . t_f + 1000$ (1)

$\theta_0 = -50\, t_f^2 + 1000 . t_f$ (2)

(1) $t_f = \frac{1000}{100} = 10_s$

(2) $\theta_0 = -50 . 10^2 + 1000 . 10 \simeq 5000\ rad$

$s = 500 . \frac{20 . 10^{-3}}{2} = 5\ m$ $\simeq 795\ tr$