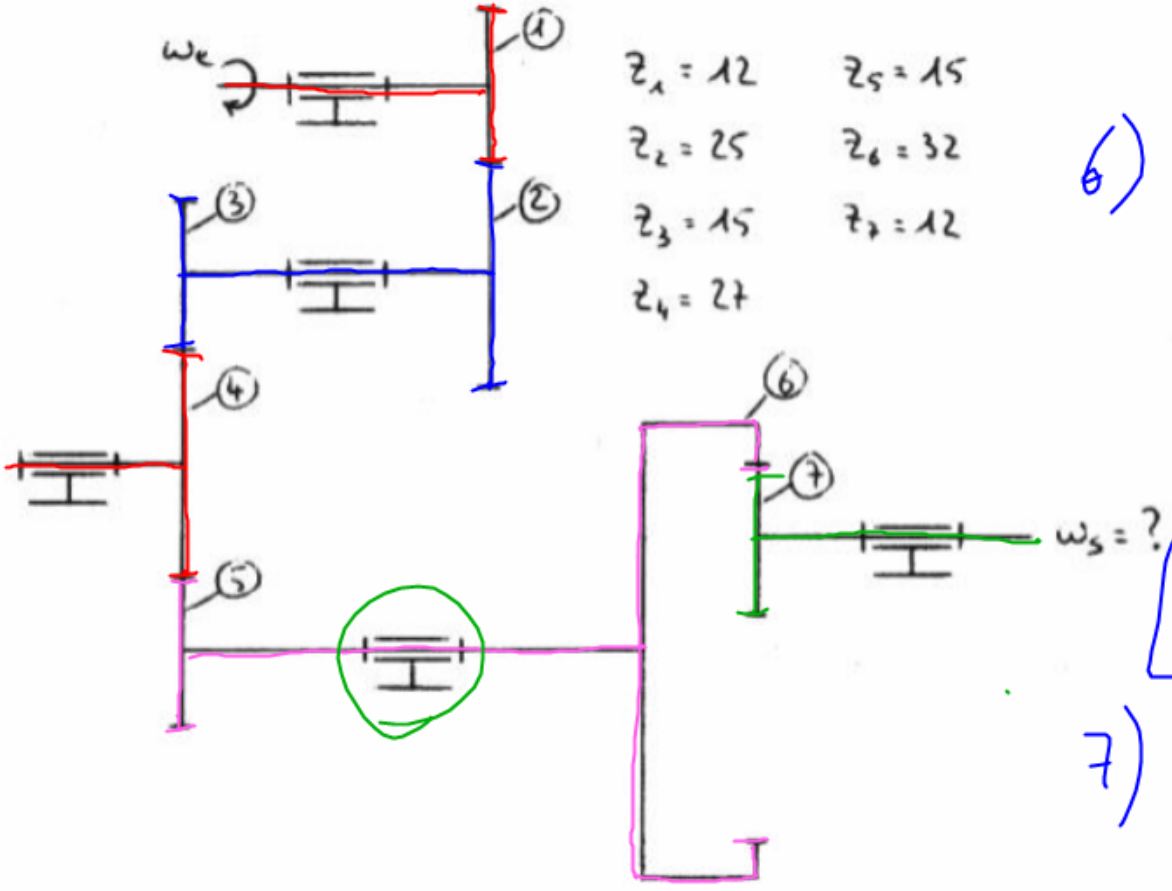


$z_1 = 12$ $\quad z_5 = 15$

$z_2 = 25$ $\quad z_6 = 32$

$z_3 = 15$ $\quad z_7 = 12$

$z_4 = 27$

6) $r_g = \dfrac{z_1}{z_2} \cdot \dfrac{z_3}{z_4} \cdot \dfrac{z_4}{z_5} \cdot \dfrac{z_6}{z_7}$

$= \dfrac{12 \cdot 15 \cdot 27 \cdot 32}{25 \cdot 27 \cdot 15 \cdot 12}$

$r_g \simeq 1,28$

7) $r = \dfrac{N_7}{N_1}$ $\quad N_7 = r \cdot N_1$

$= 1,28 \cdot 3400$

$N_7 \simeq 4350$ tr/min

$\omega = \dfrac{\pi N}{30}$

$\omega_7 \simeq 455$ rad/s

8) 25 km/h

ω_{roue} ?

$\varnothing_{roue} = 700$ mm

$25\ km/h \simeq 6,67\ m/s$ (/3,6)

$R = \frac{700}{2} \cdot 10^{-3} = 0,35\ m$

$V_{vélo} = \omega_{roue} \cdot R_{roue}$

$\omega_{roue} = \frac{V_{vélo}}{R_{roue}}$

$\omega_{roue} = \frac{6,67}{0,35} \simeq 19,1\ rad/s$

$N_{roue} \simeq 181\ tr/min$

$V = \omega \cdot R$

$1\ m/s = 3,6\ km/h$

$\omega = \frac{\pi N}{30}$

$N = \frac{30\omega}{\pi}$

$r = \frac{Z_{menante}}{Z_{menée}}$

$r = \frac{N_s}{N_e} = \frac{\omega_s}{\omega_e}$

8) 25 km/h

ω_{roue} ?

$\varnothing_{roue} = 700\ mm$

$25\ km/h \simeq 6,67\ m/s$ (×3,6)

$R = \frac{700}{2} \cdot 10^{-3} = 0,35\ m$

$V_{vélo} = \omega_{roue} \cdot R_{roue}$

$\omega_{roue} = \frac{V_{vélo}}{R_{roue}}$

$\omega_{roue} = \frac{6,67}{0,35} \simeq 19,1\ rad/s$

$N_{roue} \simeq 181\ tr/min$

$V = \omega \cdot R$

$1\ m/s = 3,6\ km/h$

$\omega = \frac{\pi N}{30}$

$N = \frac{30\omega}{\pi}$

$r = \frac{Z_{menante}}{Z_{menée}}$ (1)

$r = \frac{N_s}{N_e} = \frac{\omega_s}{\omega_e}$ (2)

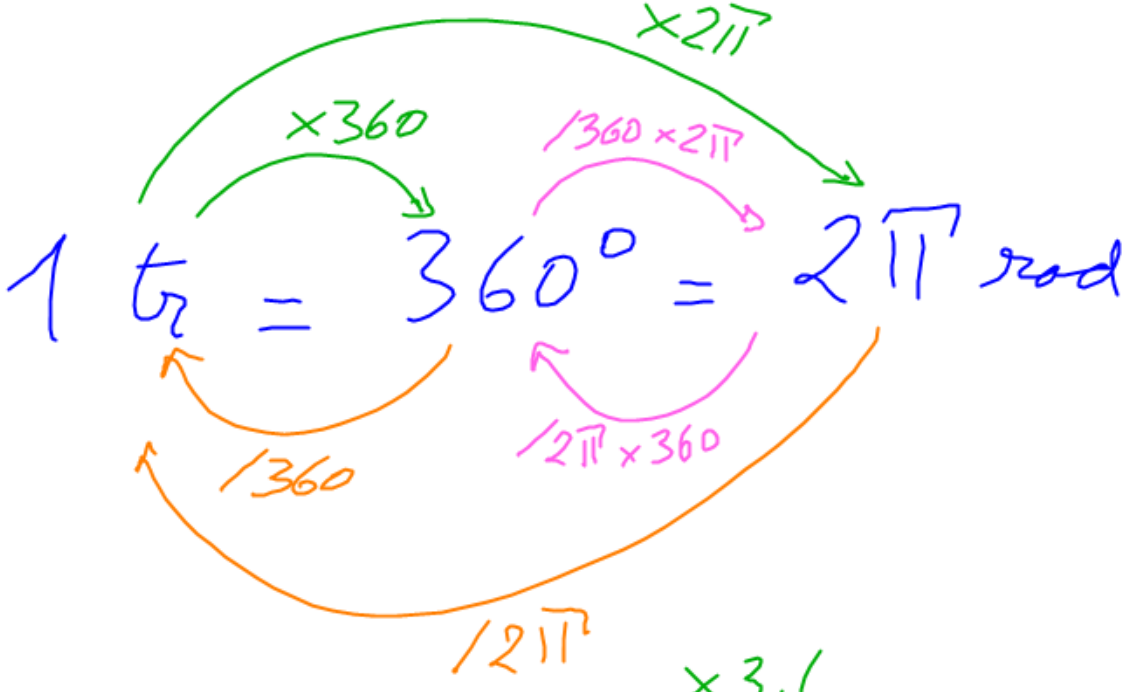
(1) $r = \frac{42}{16} \simeq 2,63$

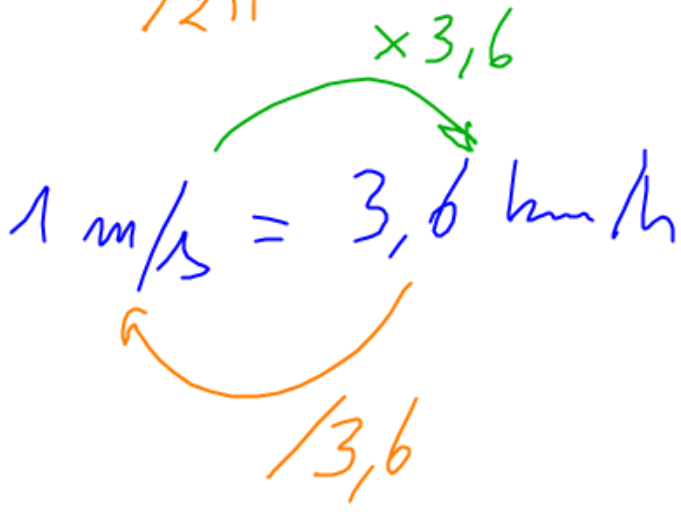
$r = \frac{N_{roue}}{N_{plateau}}$

$N_{plateau} = \frac{N_{roue}}{r}$

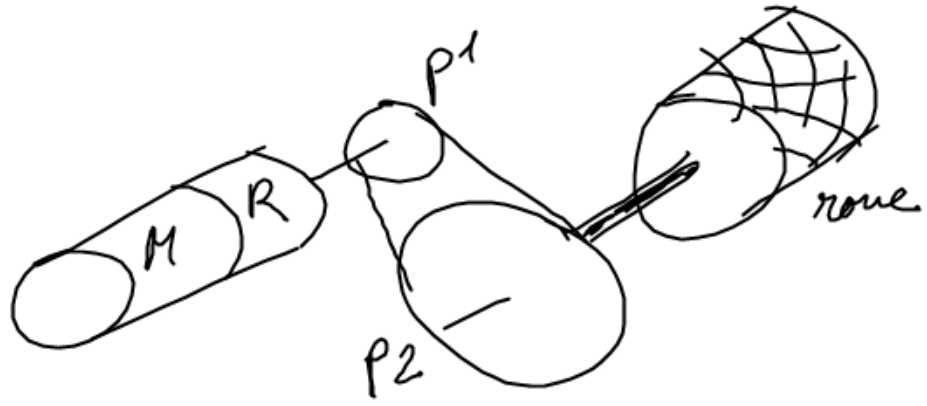
$N_{plateau} = \frac{181}{2,63} \simeq 69,2\ tr/min$

$\omega_{plateau} \simeq 7,28\ rad/s$


×2π
×360
/360 ×2π
1 tr = 360° = 2π rad
/360
/2π ×360
/2π


×3,6
1 m/s = 3,6 km/h
/3,6

ex



$N_{mot} = 6000$ tr/min

$r = \frac{1}{50}$

p_1 : $\varnothing$ 25

p_2 : $\varnothing$ 38

roue : $\varnothing$ 68 mm → $68.10^{-3} = 0{,}068$ m

$\rightarrow r_g = \frac{1}{50} \cdot \frac{25}{38} \simeq \frac{1}{76}$

$\rightarrow N_{roue}, \omega_{roue}$: $r = \frac{N_{roue}}{N_{mot}}$

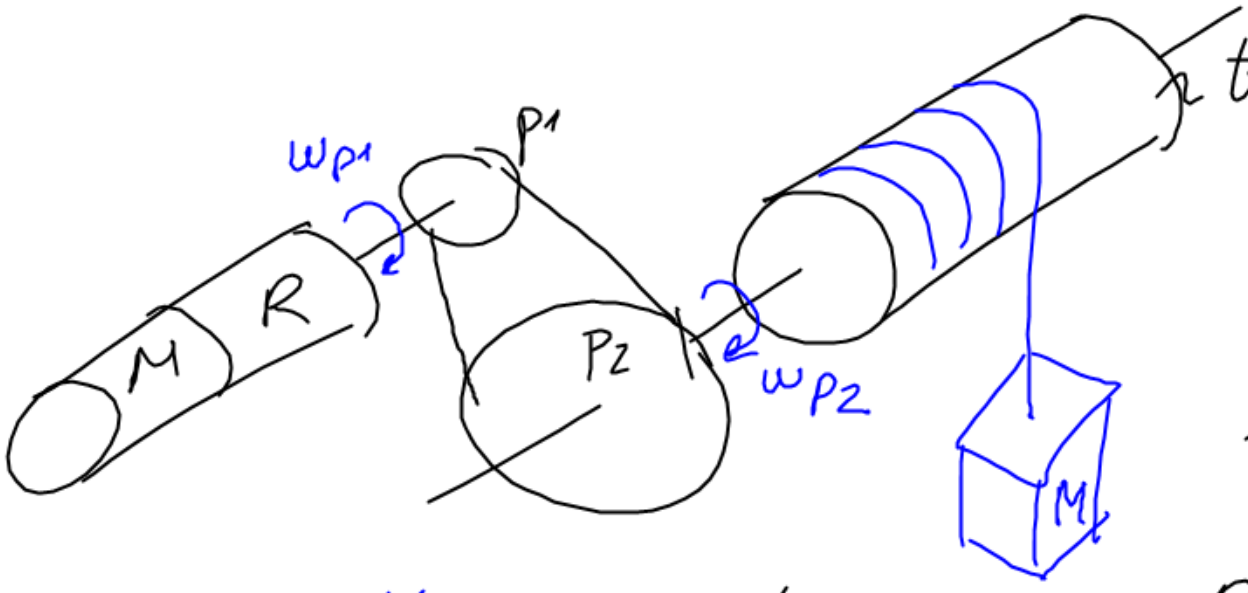
$N_{roue} = r \cdot N_{mot}$

$N_{roue} = \frac{1}{76} \cdot 6000 \simeq 78{,}9$ tr/min

$\omega_{roue} \simeq 8{,}27$ rad/s

$\rightarrow V_{véhicule}$: $V_v = \omega_{roue} \cdot R_{roue}$

$V_v = 8{,}27 \cdot \frac{0{,}068}{2} \simeq 0{,}281$ m/s $\simeq 1$ km/h



$N_{mot} = 4000$ tr/min

$r_{mot} = \frac{1}{66}$

$\varnothing_{P_1} = 25$ mm

$\varnothing_{treuil} = 180$ mm

$V_{montée} \simeq 0,2$ m/s (norme)

→ $\omega_{treuil} = \omega_{P2}$ à partir de $V_{montée}$

→ N_{P1} puis ω_{P1}

→ $r_{gpoulie}$ puis $\varnothing_{P2}$