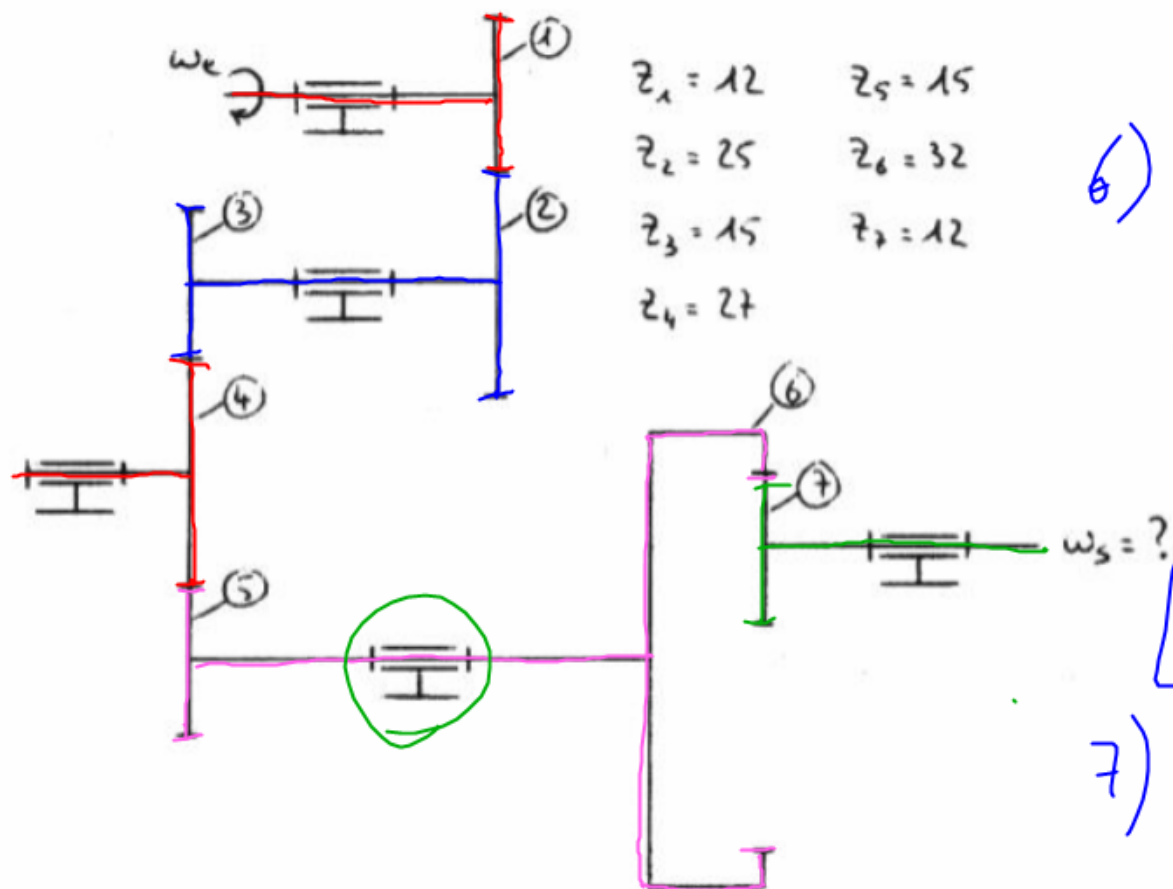




$$6) \quad i = \frac{z_1}{z_2} \cdot \frac{z_3}{z_4} \cdot \frac{z_5}{z_6} \cdot \frac{z_7}{z_8}$$

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

$$i_g \approx 1,28$$

$$7) \quad i = \frac{N_7}{N_1}$$

$$N_7 = i \cdot N_1$$

$$= 1,28 \cdot 3400$$

$$N_7 \approx 4350 \text{ kV}$$

$$\omega = \frac{1770}{30}$$

$$\omega_7 \approx 455 \text{ rad/s}$$

$$g) 25 \text{ km/h}$$

$$\omega_{\text{roue}}?$$

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

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

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

$$N_{\text{roue}} \approx 181 \text{ tr/min}$$

$$\phi_{\text{roue}} = 700 \text{ mm}$$

$$25 \text{ km/h} \xrightarrow{3,6} \approx 6,67 \text{ m/s}$$

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

$$V = \omega \cdot R$$

2/6

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

$$\omega = \frac{17 \text{ N}}{30}$$

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

$$\eta = \frac{Z_{\text{moteur}}}{Z_{\text{moyeur}}}$$

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

8) 25 km/h
 $\omega_{\text{roue}} ?$

$\phi_{\text{roue}} = 700 \text{ mm}$
 $25 \text{ km/h} \xrightarrow{3,6} \approx 6,67 \text{ m/s}$
 $R = \frac{700}{2} \cdot 10^{-3} = 0,35 \text{ m}$

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

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

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

$$N_{\text{roue}} \approx 181 \text{ tr/min}$$

$$V = \omega \cdot R$$

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

$$\omega = \frac{117 \text{ N}}{30}$$

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

$$r = \frac{Z_{\text{manteau}}}{Z_{\text{moyeu}}}$$

①

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

②

① $r = \frac{42}{16} \approx 2,63$

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

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

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

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

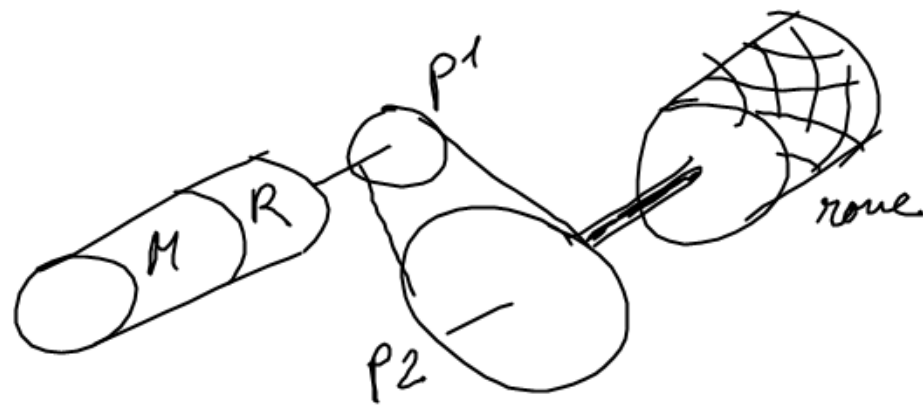
Diagram illustrating the conversion of 1 turn to degrees and radians:

- 1 turn = 360° = 2π rad
- Conversion factors for degrees: $\times 360$ (to degrees) and $/360$ (from degrees).
- Conversion factors for radians: $\times 2\pi$ (to radians) and $/2\pi$ (from radians).
- Intermediate conversion factors: $/360 \times 2\pi$ (from degrees to radians) and $/2\pi \times 360$ (from radians to degrees).

Diagram illustrating the conversion of 1 m/s to km/h:

- 1 m/s = 3.6 km/h
- Conversion factors: $\times 3.6$ (to km/h) and $/3.6$ (from km/h).

ex



$$N_{\text{mot}} = 6000 \text{ tr/min}$$

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

$$P_1 : \varnothing 25$$

$$P_2 : \varnothing 38$$

$$\text{roue} : \varnothing 68$$

$$\rightarrow 68 \cdot 10^{-3} = 0,068 \text{ m}$$

$$\rightarrow z_g = \frac{1}{50} \cdot \frac{25}{38} \approx \frac{1}{76}$$

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

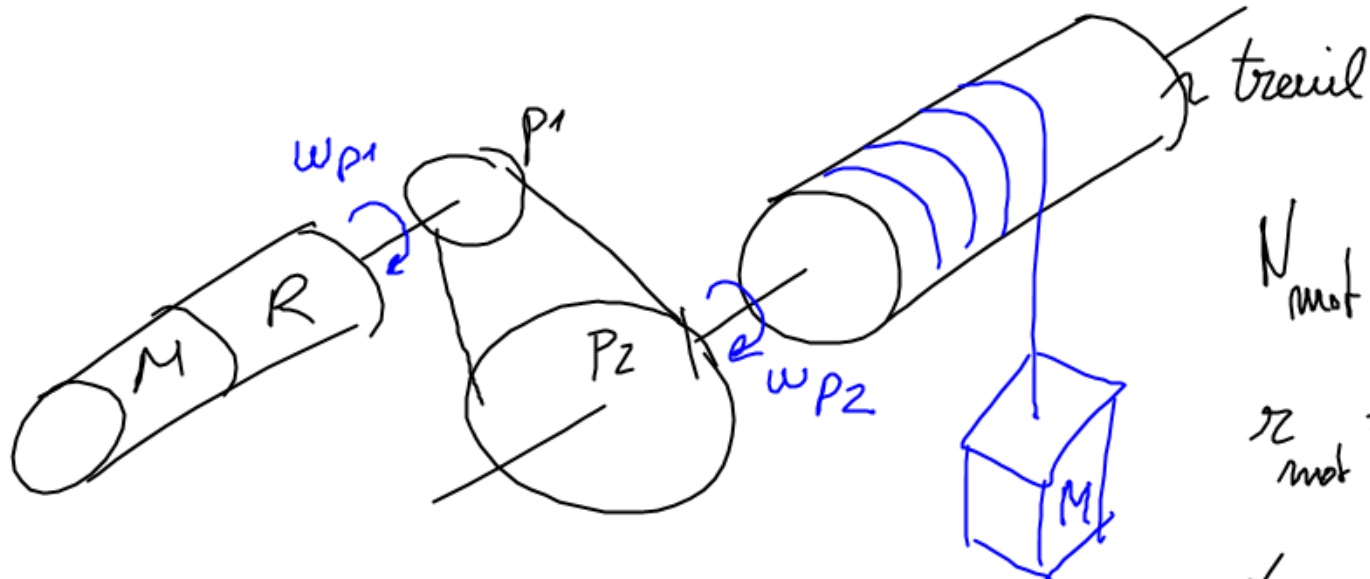
$$N_{\text{roue}} = z \cdot N_{\text{mot}}$$

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

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

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

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



$$N_{\text{mot}} = 4000 \text{ tr/min}$$

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

→ ω_{treuil} à partir de $V_{\text{montée}}$
 $= \omega_{p2}$

$$\phi_{p1} = 25 \text{ mm}$$

$$\phi_{\text{treuil}} = 180 \text{ mm}$$

$$V_{\text{montée}} \approx 0,2 \text{ m/s}$$

(norme)

→ N_{p1} puis ω_{p1}

→ r_{poulie} puis ϕ_{p2}