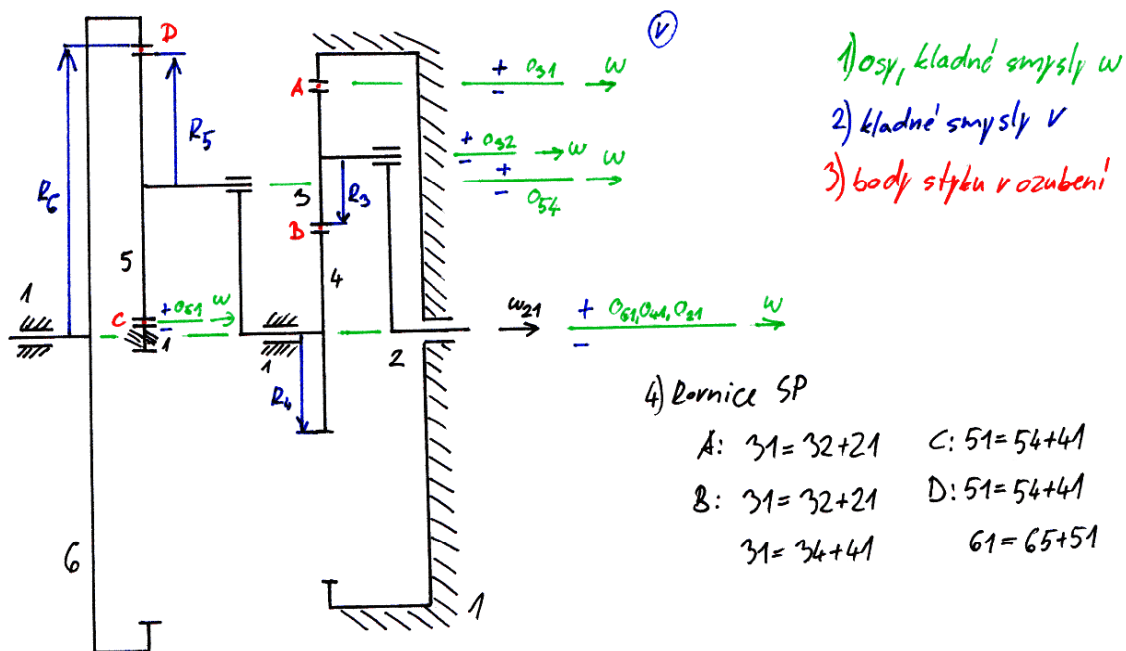


Znáš ω_{21} , urči ω_{61}



5) Rovnice vektorové

a) $\vec{v}_{31}^A = \vec{v}_{32}^A + \vec{v}_{21}^A$

b) $\vec{v}_{31}^B = \vec{v}_{32}^B + \vec{v}_{21}^B$

c) $\vec{v}_{41}^C = \vec{v}_{42}^C + \vec{v}_{21}^C$

d) $\vec{v}_{51}^D = \vec{v}_{54}^D + \vec{v}_{41}^D$

e) $\vec{v}_{51}^E = \vec{v}_{54}^E + \vec{v}_{41}^E$

f) $\vec{v}_{61}^F = \vec{v}_{65}^F + \vec{v}_{51}^F$

6) Řešení rovnic

a) $0 = v_{32}^A + v_{21}^A$

$0 = \omega_{32} R_3 + \omega_{21} (2R_3 + R_4)$

$\omega_{32} = -\omega_{21} \frac{2R_3 + R_4}{R_3} = -\omega_{21} \left(2 + \frac{R_4}{R_3} \right)$

b) $-v_{31}^B = -v_{32}^B + v_{21}^B$

$-\omega_{31} \cdot 2R_3 = -\omega_{32} R_3 + \omega_{21} R_4$

$-\omega_{31} \cdot 2R_3 = \omega_{21} \left(2 + \frac{R_4}{R_3} \right) R_3 + \omega_{21} R_4$

$-\omega_{31} \cdot 2R_3 = 2\omega_{21} R_3 + \omega_{21} R_4 + \omega_{21} R_4$

$\omega_{31} = -\omega_{21} \frac{R_3 + R_4}{R_3} = -\omega_{21} \left(1 + \frac{R_4}{R_3} \right)$

c) $-v_{31}^B = v_{41}^B$

$-\omega_{31} \cdot 2R_3 = \omega_{41} R_4$

$\omega_{21} \left(1 + \frac{R_4}{R_3} \right) 2R_3 = \omega_{41} R_4$

$2\omega_{21} R_3 + 2\omega_{21} R_4 = \omega_{41} R_4$

$\omega_{41} = \omega_{21} \left(\frac{2R_3}{R_4} + 2 \right)$

$$d) \quad 0 = -V_{54}^C + V_{44}^C$$

$$0 = -w_{54} R_5 + w_{44} (R_6 - 2R_5)$$

$$w_{54} R_5 = w_{21} \left(\frac{2R_3}{R_4} + 2 \right) (R_6 - 2R_5)$$

$$w_{54} = w_{21} 2 \left(\frac{R_3}{R_4} + 1 \right) \left(\frac{R_6}{R_5} - 2 \right)$$

$$e) \quad V_{51}^D = V_{54}^D + V_{41}^D$$

$$w_{51} \cdot 2R_5 = w_{54} R_5 + w_{41} R_6$$

$$2w_{51} R_5 = w_{21} 2 \left(\frac{R_3}{R_4} + 1 \right) \left(\frac{R_6}{R_5} - 2 \right) \cdot R_5 + w_{21} \cdot 2 \left(\frac{R_3}{R_4} + 1 \right) \cdot R_6$$

$$2w_{51} R_5 = w_{21} \cdot 2 \left(\frac{R_3}{R_4} + 1 \right) (R_6 - 2R_5 + R_6)$$

$$w_{51} R_5 = w_{21} \left(\frac{R_3}{R_4} + 1 \right) (2R_6 - 2R_5)$$

$$w_{51} = w_{21} \cdot 2 \left(\frac{R_3}{R_4} + 1 \right) \left(\frac{R_6}{R_5} - 1 \right)$$

$$f) \quad V_{61}^D = V_{51}^D$$

$$w_{61} R_6 = w_{51} 2R_5$$

$$w_{61} R_6 = w_{21} \cdot 2 \left(\frac{R_3}{R_4} + 1 \right) \left(\frac{R_6}{R_5} - 1 \right) \cdot 2R_5$$

$$w_{61} R_6 = w_{21} \cdot 4 \left(\frac{R_3}{R_4} + 1 \right) (R_6 - R_5)$$

$$w_{61} = w_{21} \cdot 4 \left(\frac{R_3}{R_4} + 1 \right) \left(1 - \frac{R_5}{R_6} \right)$$