



Input
 • alpha
 • Velocity

• Dans le triangle orange:

$$\theta_1 + 2 \cdot (90 - \alpha_1) - 180 = 0$$

$$\theta_1 = 2\alpha_1$$

• Dans le triangle bleu:

$$\sin(90 - \alpha_1) = \frac{h}{R_1}$$

$$\bullet \sin(\alpha) = \frac{L}{2R} \Rightarrow R = \frac{L}{2\sin(\alpha)}$$

$$\bullet R_2 = \frac{W}{2} + \sqrt{R^2 - \frac{1}{4}L^2}$$

$$\bullet R = \frac{R_1 + R_2}{2}$$

$$\bullet R_1 = 2R - R_2$$

$$\bullet \alpha_2 = \arcsin\left(\frac{L}{2R_2}\right)$$

$$\bullet \alpha_1 = \arcsin\left(\frac{L}{2R_1}\right)$$

Compute speed v_1 and v_2

$$v = d \cdot \Delta t \Rightarrow \Delta t = \frac{v}{d}$$

$$v_1 = d_1 \cdot \Delta t$$

$$v_2 = d_2 \cdot \Delta t$$

- $V_2 = \frac{d_2}{d} V$

- $d = R \cdot \alpha$

- $d_1 = R_1 \cdot \alpha_1$

- $d_2 = R_2 \cdot \alpha_2$

- $V_2 = \frac{R_2 \cdot \alpha_2}{R \cdot \alpha} \cdot V$

- $V_1 = \frac{R_1 \cdot \alpha_1}{R \cdot \alpha} \cdot V$

