$ORIGIN := 1$

$\varphi_R := 1Hza = 360\frac{°}{s}$

$R := 12cm$

$rv := \begin{pmatrix} 5 \\ 4 \\ 3 \end{pmatrix} cm$

$D := 80cm$

$h := 100cm$

$FRAME := 500 \qquad \theta t := 2FRAME° = 1 \times 10^{3}°$

$i := if(0° < \theta t \le 360°, 3, if(360° < \theta t \le 720°, 2, 1)) = 1$

$r := rv_i$

$\varphi_D := \varphi_R \frac{R}{r}$

$V := \frac{D}{2}\varphi_D = 21.715\,kph$

$xp := \begin{pmatrix} 2R\cos(\theta t) \\ 2R\cos(\theta t - \pi) \end{pmatrix} \quad yp := \begin{pmatrix} 2R\sin(\theta t) \\ 2R\sin(\theta t - \pi) \end{pmatrix} \quad xp1 := \begin{pmatrix} R\cos\left(\theta t - \frac{\pi}{2}\right) \\ R\cos\left(\theta t - \pi - \frac{\pi}{2}\right) \end{pmatrix} yp1 := \begin{pmatrix} R\sin\left(\theta t - \frac{\pi}{2}\right) \\ R\sin\left(\theta t - \pi - \frac{\pi}{2}\right) \end{pmatrix}$

$\theta 1t := \frac{R}{r}\theta t = 41.888$

$xw1 := \begin{pmatrix} \frac{D}{2}\cos(\theta 1t) \\ \frac{D}{2}\cos(\theta 1t - \pi) \end{pmatrix} - 100cm \; yw1 := \begin{pmatrix} \frac{D}{2}\sin(\theta 1t) \\ \frac{D}{2}\sin(\theta 1t - \pi) \end{pmatrix} \quad xw2 := \begin{pmatrix} \frac{D}{2}\cos\left(\theta 1t + \frac{\pi}{2}\right) \\ \frac{D}{2}\cos\left(\theta 1t - \pi + \frac{\pi}{2}\right) \end{pmatrix} - 100cm \quad yw2 := \begin{pmatrix} \frac{D}{2}\sin\left(\theta 1t + \frac{\pi}{2}\right) \\ \frac{D}{2}\sin\left(\theta 1t - \pi + \frac{\pi}{2}\right) \end{pmatrix}$

$xw3 := \begin{pmatrix} \frac{D}{2}\cos\left(\theta 1t - \frac{\pi}{4}\right) \\ \frac{D}{2}\cos\left(\theta 1t - \pi - \frac{\pi}{4}\right) \end{pmatrix} - 1(yw3 := \begin{pmatrix} \frac{D}{2}\sin\left(\theta 1t - \frac{\pi}{4}\right) \\ \frac{D}{2}\sin\left(\theta 1t - \pi - \frac{\pi}{4}\right) \end{pmatrix} xw4 := \begin{pmatrix} \frac{D}{2}\cos\left(\theta 1t + \frac{\pi}{2} - \frac{\pi}{4}\right) \\ \frac{D}{2}\cos\left(\theta 1t - \pi + \frac{\pi}{2} - \frac{\pi}{4}\right) \end{pmatrix} - 10($ $yw4 := \begin{pmatrix} \frac{D}{2}\sin\left(\theta 1t + \frac{\pi}{2} - \frac{\pi}{4}\right) \\ \frac{D}{2}\sin\left(\theta 1t - \pi + \frac{\pi}{2} - \frac{\pi}{4}\right) \end{pmatrix}$

$\frac{D}{2}+2cm$

$\frac{R\sin(\theta)}{rv_1\sin(\theta)}$

$\frac{\frac{D}{2}\sin(\theta)}{\begin{pmatrix}R\\r\end{pmatrix}}$

$\frac{\begin{pmatrix}-R\\-r\end{pmatrix}}{\begin{pmatrix}0cm\\0cm\end{pmatrix}}$

yp

yw1

yw2

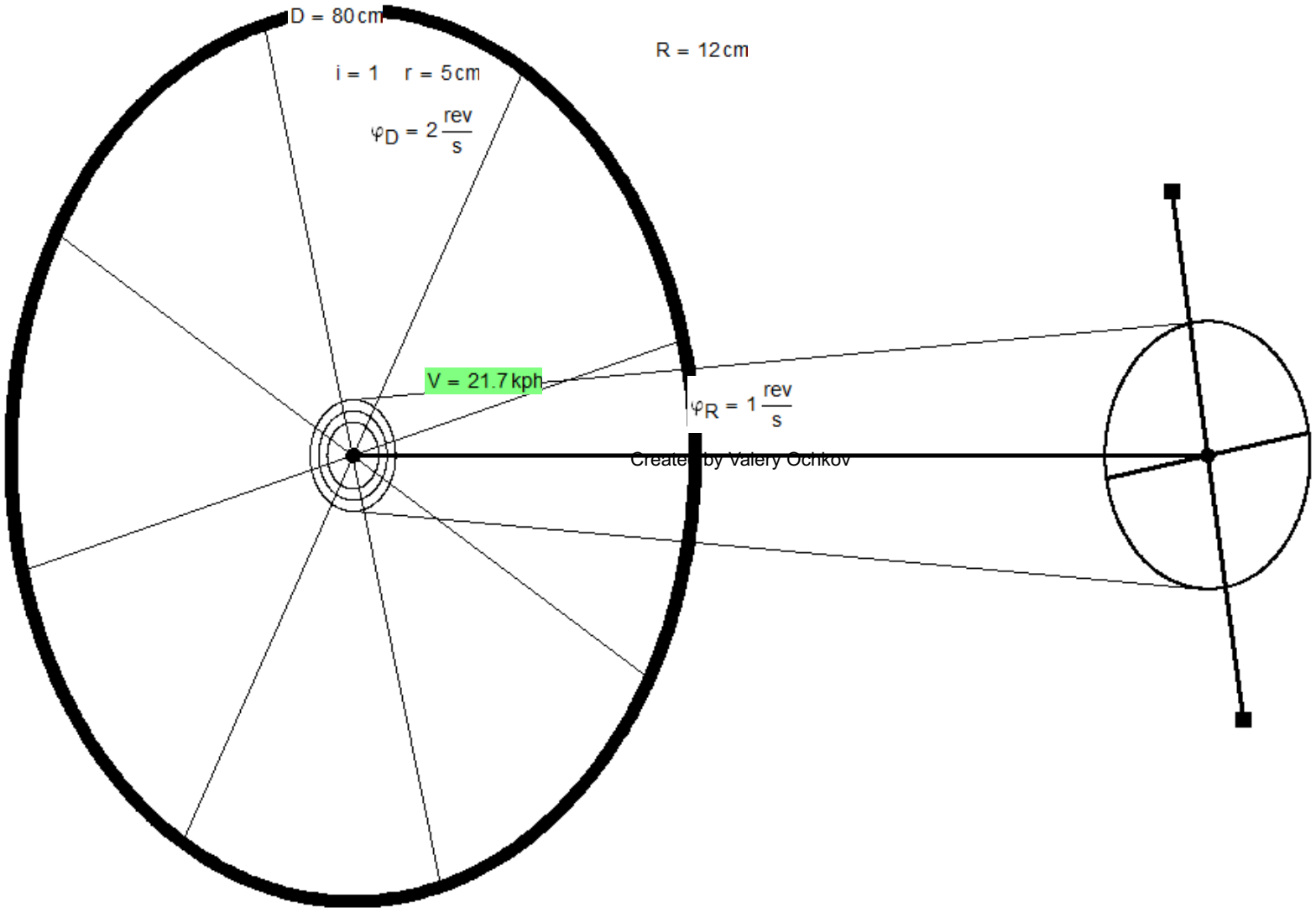
yp1

yw3

yw4

$rv_2\sin(\theta)$

$rv_3\sin(\theta)$



$-\left(\frac{D}{2}+2cm\right)$

$-\left(\frac{D}{2}+2cm+h\right)$ $R\cos(\theta), rv_1\cos(\theta)-h, \frac{D}{2}\cos(\theta)-h, \begin{pmatrix}0cm\\-100cm\end{pmatrix}, \begin{pmatrix}0cm\\-100cm\end{pmatrix}, \begin{pmatrix}0cm\\-100cm\end{pmatrix}, xp, xw1, xw2, xp1, xw3, xw4, rv_2\cos(\theta)-h, rv_3\cos(\theta)-h$ $2R+2cm$