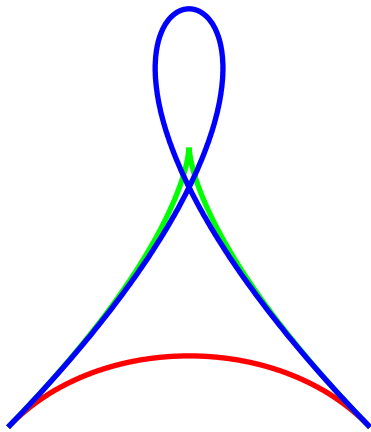


Lösung zu Hermite-Kurven mit Schleife



o. B. d. A. $a = 0$

$$Q(t)_{x,y} = \begin{pmatrix} 0 & b & \rho & \rho \\ 0 & 0 & \rho & -\rho \end{pmatrix} \cdot \begin{pmatrix} 2 & -3 & 0 & 1 \\ -2 & 3 & 0 & 0 \\ 1 & -2 & 1 & 0 \\ 1 & -1 & 0 & 0 \end{pmatrix} \cdot \begin{pmatrix} t^3 \\ t^2 \\ t \\ 1 \end{pmatrix} = \begin{pmatrix} -2b + 2\rho & 3b - 3\rho & \rho & 0 \\ 0 & -\rho & \rho & 0 \end{pmatrix} \cdot \begin{pmatrix} t^3 \\ t^2 \\ t \\ 1 \end{pmatrix}$$

Spitze (beim Übergang zur Schleife) für $Q' \left(\frac{1}{2} \right) = 0$:

$$\begin{aligned} x'(t) &= -6bt^2 + 6\rho t^2 + 6bt - 6\rho t + \rho \\ y'(t) &= -2\rho t + \rho \end{aligned}$$

$$\begin{aligned} x' \left(\frac{1}{2} \right) &= -\frac{3}{2}b + \frac{3}{2}\rho + 3b - 3\rho + \rho = \frac{3}{2}b - \frac{1}{2}\rho \\ y' \left(\frac{1}{2} \right) &= 0 \end{aligned}$$

$$x' \left(\frac{1}{2} \right) = 0 \Leftrightarrow \rho = 3b$$