$$f^{(4)}(t) + f^{(2)}(t) + f(t) = 0$$

$$\frac{d}{dt}\begin{pmatrix} f^3(t) \\ f^2(t) \\ f^1(t) \\ f(t) \end{pmatrix} = \begin{pmatrix} 0 & -1 & 0 & -1 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix} \begin{pmatrix} f^3(1) \\ f^2(t) \\ f^1(t) \\ f(t) \end{pmatrix}$$

met inlezen de rde rijen de matrix.

$$f = \frac{2\left(e^{-t/2} + \frac{3}{2}e^{t/2}\right)\sqrt{3}\sin\left(\frac{\sqrt{3}}{2}t\right) + e^{-t/2}\cdot\cos\left(\frac{\sqrt{3}}{2}t\right)}{3}$$

ii) Voeg een kolom toe:

$$\frac{d}{dt}\begin{pmatrix} f^3(t) \\ f^2(t) \\ f^1(t) \\ f(t) \\ 1 \end{pmatrix} = \begin{pmatrix} 0 & -1 & 0 & -1 & 2 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix} \begin{pmatrix} f^3(1) \\ f^2(t) \\ f^1(t) \\ f(t) \\ 1 \end{pmatrix}$$