

$$(1) \quad A = \begin{pmatrix} a & 1 \\ 1 & a \end{pmatrix} \quad x = \begin{pmatrix} x_1 \\ x_2 \end{pmatrix}$$

$$Ax = \lambda x$$

$$x_1 \begin{pmatrix} a \\ 1 \end{pmatrix} + x_2 \begin{pmatrix} 1 \\ a \end{pmatrix} = \lambda \begin{pmatrix} x_1 \\ x_2 \end{pmatrix}$$

$$\begin{pmatrix} x_1 a + x_2 \\ x_1 + x_2 a \end{pmatrix} = \begin{pmatrix} \lambda x_1 \\ \lambda x_2 \end{pmatrix}$$

$$\begin{cases} x_1 a + x_2 = \lambda x_1 \\ x_1 + x_2 a = \lambda x_2 \end{cases}$$

$$(2) \quad \vec{v} = \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \quad \vec{w} = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$$

En vektor i planet er gitt ved

$$\vec{a} = s\vec{v} + t\vec{w}$$

$$u \neq \vec{a} = \begin{pmatrix} s_1 + t \\ s_1 + 2t \\ s_1 + 3t \end{pmatrix}$$

$$\begin{cases} s_1 + t \neq u_1 \\ s_1 + 2t \neq u_2 \\ s_1 + 3t \neq u_3 \end{cases}$$