Fall 3.

$\lambda_1 \neq 0 \wedge \lambda_2 \neq 0$

$x_1 + x_2 = \mu$

$x_2 = -x_1 + \mu$

$x_1^2 + x_2^2 = 1$

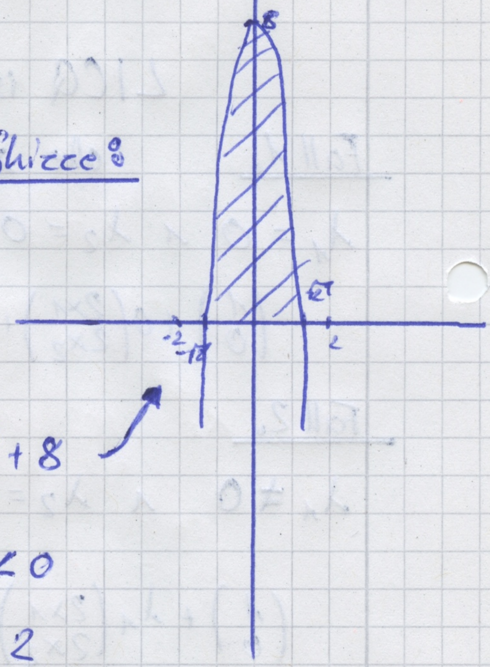
$x_1^2 + (-x_1 + \mu)^2 = 1$

$x_1^2 + x^2 - 2x_1\mu + \mu^2 - 1 = 0$

$2x_1^2 - 2x_1\mu + \mu^2 - 1 = 0$

$$x_1 = \frac{2\mu \pm \sqrt{4\mu^2 - 8(\mu^2 - 1)}}{4} \leftarrow -4\mu^2 + 8$$

Skizze:



NR:

Man sieht dass die Diskriminante $-4\mu^2 + 8 < 0$

nur für den Bereich $\mu^2 > 2$

$[-\sqrt{2}, \sqrt{2}] \geq 0$ ist. $\mu > \pm\sqrt{2}$

$\mu > \sqrt{2}$

$\mu < -\sqrt{2}$

$\hookrightarrow x_2 = \mu - x_1$

$= \mu - \frac{\mu}{2} \pm \frac{1}{2}\sqrt{2 - \mu^2}$

$= \frac{\mu}{2} \pm \frac{1}{2}\sqrt{2 - \mu^2}$

Fall 3.1

$x_1 = \frac{\mu}{2} + \frac{1}{2}\sqrt{2 - \mu^2}$

$x_2 = \frac{\mu}{2} - \frac{1}{2}\sqrt{2 - \mu^2}$

$1 + \lambda_1(\mu + \sqrt{2 - \mu^2}) + \lambda_2 = 0$

$\Leftrightarrow \lambda_2 = -1 - \lambda_1(\mu + \sqrt{2 - \mu^2})$

$\lambda_1(\mu - \sqrt{2 - \mu^2}) - 1 - \lambda_1(\mu + \sqrt{2 - \mu^2}) = 0$

$\lambda_1 = \frac{-1}{2\sqrt{2 - \mu^2}}$ $\lightning$

$\lambda \leq 0$ Null wegen Bruch kritisch

Fall 3.2

$x_1 = \frac{\mu}{2} - \frac{1}{2}\sqrt{2 - \mu^2}$

$x_2 = \frac{\mu}{2} + \frac{1}{2}\sqrt{2 - \mu^2}$