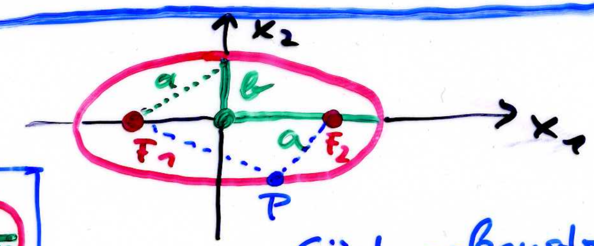
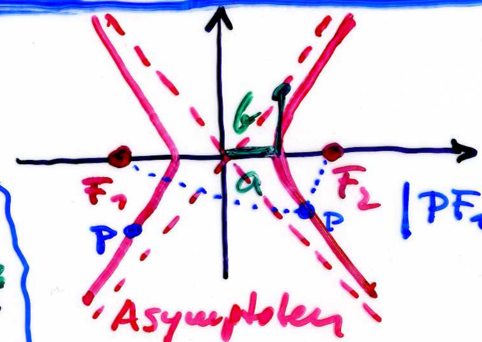
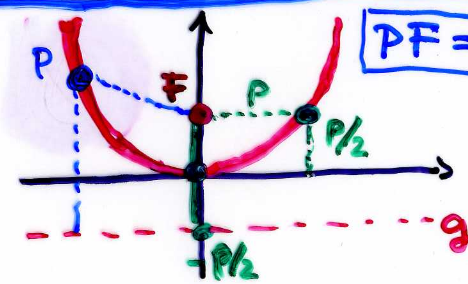
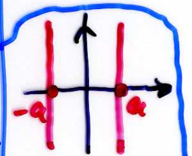
Kurve Φ Signatur (n_+, n_-, n_0)	Eigenwerte Vorzeichen λ_1 λ_2	Eigenschaften	Normalform $\lambda_1 x_1^2 + \lambda_2 x_2^2 + (b_1' x_1 + b_2' x_2) + c' = 0$	geometrische Darstellung
(2,0,0) Ellipse	>0 >0	$\det A > 0$, $c' < 0$	$\frac{x_1^2}{a^2} + \frac{x_2^2}{b^2} = 1$	 Gärtnerkonstruktion $PF_1 + PF_2 = 2a$ konstant
Spezialfall Kreis		$a = b = r$	$x_1^2 + x_2^2 = r^2$	
entartet 1 Punkt		$c' = 0$	$\frac{x_1^2}{a^2} + \frac{x_2^2}{b^2} = 0$	
$\Phi = \emptyset$		$c' > 0$		imaginäre Ellipse
(1,1,0) Hyperbel	>0 <0 (<0 >0 analog)	$\det A < 0$, $c' \neq 0$	$\frac{x_1^2}{a^2} - \frac{x_2^2}{b^2} = 1$	 $\lvert PF_1 - PF_2 \rvert = 2a$
entartet: Paar sich schneidender Geraden		$c' = 0$	$\frac{x_1^2}{a^2} - \frac{x_2^2}{b^2} = 0$, d.h. $x_2 = \pm d\, x_1$ ($d = \frac{b}{a}$)	
(1,0,1) Parabel	>0 $=0$	$\det A = 0$, $b_2' \neq 0$	$x_1^2 = 2p\, x_2$	 $PF = Pg$
entartet: · 2 parall. Gerad.		$b_2' = 0$, $c' < 0$	$\frac{x_1^2}{a^2} = 1$ d.h. $x_1 = a$, $x_1 = -a$	
· 1 Doppelgerade		$c' = 0$	$x_1^2 = 0$ $(a = 0)$	
$\Phi = \emptyset$		$c' > 0$		
(0,0,2)	$=0$ $=0$	$b_1' \neq 0$ oder $b_2' \neq 0$	Gerade $b_1' x_1 + b_2' x_2 + c' = 0$	Gerade
$\Phi = \emptyset$		$b_1' = b_2' = 0$, $c' \neq 0$		imaginäre Gerade