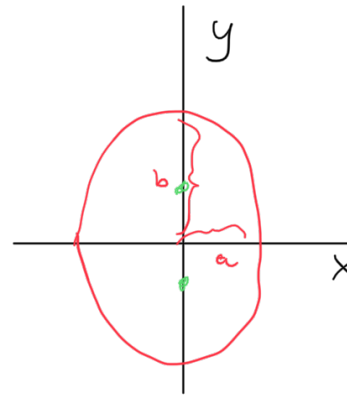


Keglesnitt

Ellipser

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$



Halvaksler: a og b

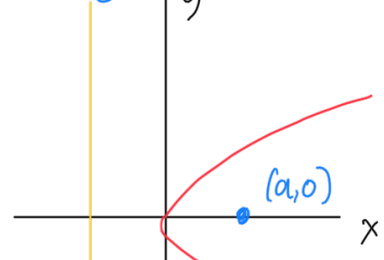
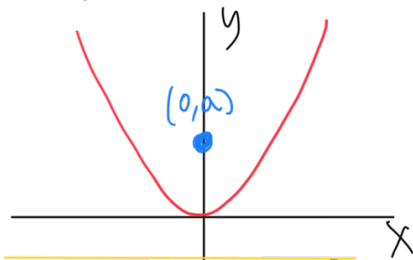
Brennvidde: $c = \sqrt{a^2 - b^2}$ (for $a > b$)

Kan parametriseres ved $\mathbf{r}(t) = (a \cos t, b \sin t)$
 $t \in [0, 2\pi]$

Parabler

$$x^2 = 4ay$$

$$\text{eller } y^2 = 4ax$$



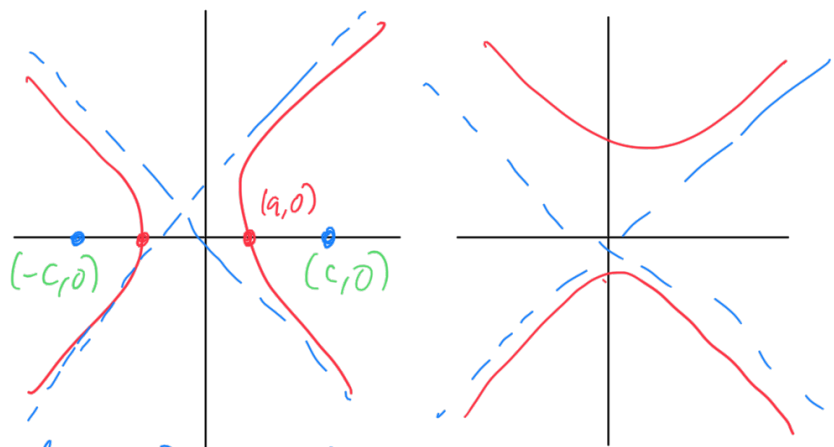
Brennpunkt: $(0, a)$ eller $(a, 0)$ $y = -a$

Brennvidde: a

Styrelinje : $y = -a$ (eller $x = -a$)

Kan parametriseres ved $r(t) = (t, \frac{t^2}{4a})$
(eller $r(t) = (\frac{t^2}{4a}, t)$)

Hyperbler $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ eller $\frac{y^2}{a^2} - \frac{x^2}{b^2} = 1$



Brennpunkter : $(-c, 0)$ og $(c, 0)$

Brennvidde : $c = \sqrt{a^2 + b^2} > 0$

Asymptoter : $y = \pm \frac{b}{a} x$

Klassificering av bjergesmitt : Gitt en likning

Normal - U

$$Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$$

→ fullfør kvadratene og gjør et variabelskifte

$$u = \alpha x + \beta y$$

$$v = \delta x + \gamma y$$

slik at vi får noe på standardform

$$\bullet \frac{u^2}{a^2} + \frac{v^2}{b^2} = 1$$

$$\bullet v^2 = 4au$$

$$\bullet \frac{u^2}{a^2} - \frac{v^2}{b^2} = 1$$

→ les av brennvidde, styrelinjer, etc