

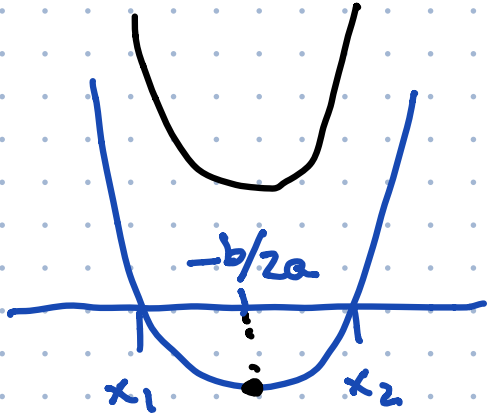
Quadratic Functions

$$y = ax^2 + bx + c$$

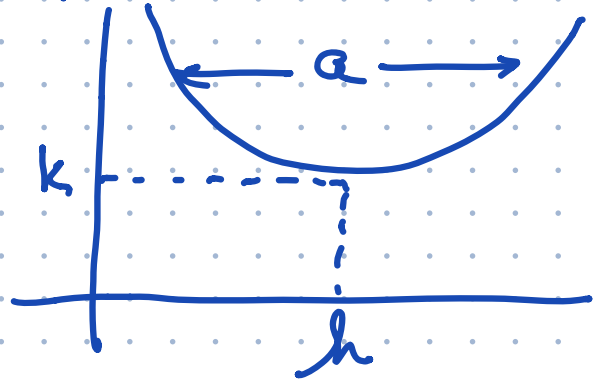
Factoring

Completing the square

$$y = a(x - x_1)(x - x_2)$$



$$y = a(x - h)^2 + k$$



$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$b^2 - 4ac < 0$$

↑
Discriminant

$$\text{vertex @ } \frac{x_1 + x_2}{2} = -\frac{b}{2a}$$