$y = Ax^2 + Bx + C$

$0 = Ax^2 + Bx + C$ $\div A$

$0 = x^2 + \frac{Bx}{A} + \frac{C}{A}$

$= x^2 + \frac{B}{A}x + \frac{C}{A}$

$x^2 + \frac{B}{A} = (x + \frac{B}{2A})^2 - \frac{B^2}{4A^2}$?

"Complete the square"

$ax^2 + bx + c \rightarrow a(x-h)^2 + k$

$\rightarrow \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}$

$B^2 - 4AC = D$

$D == 0$

1 intersection

$D > 0$

2 intersections

$D < 0$

No intersections