Ax2 + Bx + C = 0

$$x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$$

Finding the ROOTS, Solving for X = ZERO:

 Just like you can solve Y = mx + b for a linear equation (y = b when x = 0)

You can find the ‘Y’ values when x = 0

What value of ‘x’ makes this true: x2 – 10x = -9

x2 – 10x + 9 = 0

(x – 9) (x – 1)

When x = 9 or x = 1, y will equal Zero.

In some problems you might not “See” the factors easily, so use the formula.

 a = (1) b = (-10) c = (9)

$x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$ = $\frac{-(-10)\pm \sqrt{(-10)^{2}-4(1)(9)}}{2(1)}$ = $\frac{10 \pm \sqrt{100 - 36)}}{2}$ = $\frac{10 \pm \sqrt{64)}}{2}$ =

$\frac{10 \pm 8}{2}$ 🡪 $\frac{18}{2} and \frac{2}{2} $🡪 (x = 9 and 1)

KAHN ACADEMY:

 [https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:quadratic-functions-equations/x2f8bb11595b61c86:quadratic-formula-a1/v/using-the-quadratic-formula](https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86%3Aquadratic-functions-equations/x2f8bb11595b61c86%3Aquadratic-formula-a1/v/using-the-quadratic-formula)

 [https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86:quadratic-functions-equations](https://www.khanacademy.org/math/algebra/x2f8bb11595b61c86%3Aquadratic-functions-equations)

PURPLE MATH: <https://www.purplemath.com/modules/quadform.htm>

MATH PLANET:

 <https://www.mathplanet.com/education/algebra-1/quadratic-equations/the-quadratic-formula>

Solver Calculator: <https://www.mathsisfun.com/quadratic-equation-solver.html>

Varsity Tutors: <https://www.varsitytutors.com/hotmath/hotmath_help/topics/quadratic-function>

Virtual Nerd: <https://virtualnerd.com/act-math/algebra/solving-quadratic-equations/quadratic-formula-definition>