Let $a, c, k \in \mathbb{R}$ with $a \neq 0$.
Show that the solutions to the equation

$$ax^2 + 2kx + c = 0$$

are given by

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

Remark: This formula for the roots of a quadratic equation is especially convenient to use when $k \in \mathbb{Z}$. 