Solving Equations

The more numbers you are prepared to allow to exist, the more equations you can solve:

$x + 3 = 10$

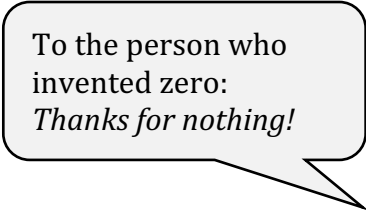$x + 3 = 3$

$x + 10 = 3$

$2x + 3 = 10$

$x^2 + 3 = 10$

$x^2 + 10 = 3$

To the person who invented zero:
Thanks for nothing!

Solve: $x^2 - 2x + 5 = 0$

The solutions to $ax^2 + bx + c = 0$ are:

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

provided that $a \neq 0$.

$$\xleftarrow{\quad\underset{-5}{|}\quad\underset{-4}{|}\quad\underset{-3}{|}\quad\underset{-2}{|}\quad\underset{-1}{|}\quad\underset{0}{|}\quad\underset{1}{|}\quad\underset{2}{|}\quad\underset{3}{|}\quad\underset{4}{|}\quad\underset{5}{|}\quad}\rightarrow$$

$$\longleftarrow \quad | \quad | \quad | \quad | \quad | \quad | \quad | \quad | \quad | \quad | \quad | \quad \longrightarrow$$

−5   −4   −3   −2   −1   0   1   2   3   4   5