

REAL SQUARE ROOTS

Why

We want to solve equations with squares.

Definition

Let b be any real number. We want to find a to solve

$$a^2 = b$$
.

We call a solution a a square root of b.

Proposition 1. A positive real number has two square roots.

Despite the above proposition, we still speak of the square root of a real number, which is the positive square root. We also speak of the square root function which associates a real number to its positive square root.

Proposition 2. A two roots or a positive real number are additive inverses.²

Notation

As with natural numbers, we denote the (positive) square root of the real number $x \in \mathbf{R}$ by \sqrt{x} . Some authors refer to both the roots of x by writing $\pm \sqrt{x}$.

 $^{^1\}mathrm{Future}$ editions will include an account.

²Future editions will include an account.

