Why

How do the modulus and conjugate of a complex number relate?

Results

Recall that $z = x + iy$ means that $z^* = x - iy$ and so

$$z\bar{z} = (x + iy)(x - iy) = x^2 + y^2 = |z|^2.$$

Complex Conjugates and Moduli

Complex Products · Complex Distance · Complex Conjugates

Complex Sums · Norm Metrics · Complex Plane

Complex Numbers · Norms

Functionals · Real Norm · Metrics

Vectors · Absolute Value

Real Arithmetic · Real Vectors

N-Dimensional Space

Distance

Space Distance

Plane Distance

Interval Length · Real Space

Real Multiplicative Inverses · Intervals

Real Products · Real Line · Real Plane

Real Additive Inverses

Rational Multiplicative Inverses · Rational Arithmetic · Real Sums · Real Order · Integral Line · Geometry

Rational Products · Rational Sums · Real Numbers · Fields · Rational Order

Rational Numbers · Groups · Lists

Integer Arithmetic · Integer Additive Inverses

Integer Products · Natural Multiplicative Identity · Natural Additive Identity · Inverse Elements · Set Numbers

Integer Sums · Arithmetic · Identity Elements · Element Functions · Finite Sets

Natural Power · Algebras · Equivalent Sets · Direct Products

Natural Products · Integer Order · Operations · Comparisons · Function Inverses · Family Unions and Intersections

Natural Sums · Integer Numbers · Orders · Function Images · Function Composites · Families

Recursion Theorem · Natural Order · Converse Relations · Equivalence Relations · Functions

Peano Axioms · Relations

Natural Induction · Set Products

Natural Numbers · Set Powers · Generalized Set Dualities

Successor Sets · Unordered Triples · Set Dualities · Intersection of Empty Set · Partitions · Set Unions and Intersections

Ordered Pairs · Set Complements · Pair Union · Set Intersections

Set Differences · Set Unions · Pair Intersection

Unordered Pairs · Empty Set

Set Specification

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Identities · Sets

Names

Letters · Objects