Section 1.2: Cauchy Sequences

Definitions

1. Cauchy sequence
2. accumulation point

Theorems

- Theorem 1.3: Convergent sequences are Cauchy.
- Theorem 1.4: Cauchy sequences are bounded.
- Theorem 1.5: Rationals and irrationals accumulate at every real number.
- Theorem 1.6: Bolzano-Weierstrass
- Theorem 1.7: Cauchy sequences are convergent.
Section 1.3: Arithmetic Operations on Sequences

**Theorems**

- Theorem 1.8: Sum of convergent sequences
- Theorem 1.9: Product of convergent sequences
- Theorem 1.11: Quotient of convergent sequences
- Theorem 1.12: Comparison of convergent sequences
- Theorem 1.13: Product with sequence converging to zero
Section 1.4: Subsequences and Monotone Sequences

Definitions

1. subsequence
2. increasing
3. decreasing
4. monotone

Theorems

- Theorem 1.14: Convergence of subsequences
- Theorem 1.15: Subsequences of a bounded sequence
- Theorem 1.16: Monotone convergence
- Theorem 1.17: Accumulation points