

Ordinal Numbers

SET_THEORY_02_229593678086144

Definition 0.1. An ordinal number is a transitive set α such that every element of α is a transitive set.

Let an ordinal stand for an ordinal number.

SET_THEORY_02_5852994258075648

Definition 0.2. Ord is the class of all ordinals.

SET_THEORY_02_2358097091756032

Proposition 0.3. Let α be an ordinal. Then every element of α is an ordinal.

Proof. Let x be an element of α . Then x is transitive.

Let us show that every element of x is a subset of x . Let y be an element of x . Then y is a subset of x . Let z be an element of y . Every element of y is an element of x . Hence z is an element of x . End.

Thus every element of x is transitive. Therefore x is an ordinal. \square