Re: Peano's space−filling curve

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>> A is a set; that means it has some things that we
>> call elements, some > things are elements of A
>> and some things are not. That's all you need to know.

>I can conceive of this, but then I encounter a new problem.
>It always seemed to me that the domain of a function and
>the rule that linked it to the codomain were inextricably
>linked, with the set comprising the domain determining which
>rules were applicable, while a given rule might only be
>relevant to a certain class(es) of sets. If the domain was a
>set of the names of famous people, then the rule 'has a
>birthday on' can map the name to a codomain of 366 Julian
>days, while the rule 'multiply by two' is meaningless.
>However, its inverse 'multiply by 1/2' is not incompatible
>with the codomain. Similarly the first mentioned rule is
>meaningless when applied to a domain of integers while its
>inverse 'is the birthday of' can be applied to integers, as
>long as these represent Julian days.

OK. Maybe you are ready for the formal definition of a function.
Let A and B be sets. Any sets at all. A function f:A−>B is
a subset f\subsetof AxB with the following two properties:

1) If a \in A, then there is a b \in B with (a,b) \in f.
2) If a \in A, and b_1 ,b_2 \in B with (a,b_1) \in f and (a,b_2) \in f
then b_1 =b_2.

In other words, a function f is a collection of ordered pairs
so that every a \in A has exactly one b\in B with (a,b)\in f.
We give this unique b the name f(a).

In essence, this identifies the intuitive idea of a function with
its graph.

−−Dan Grubb