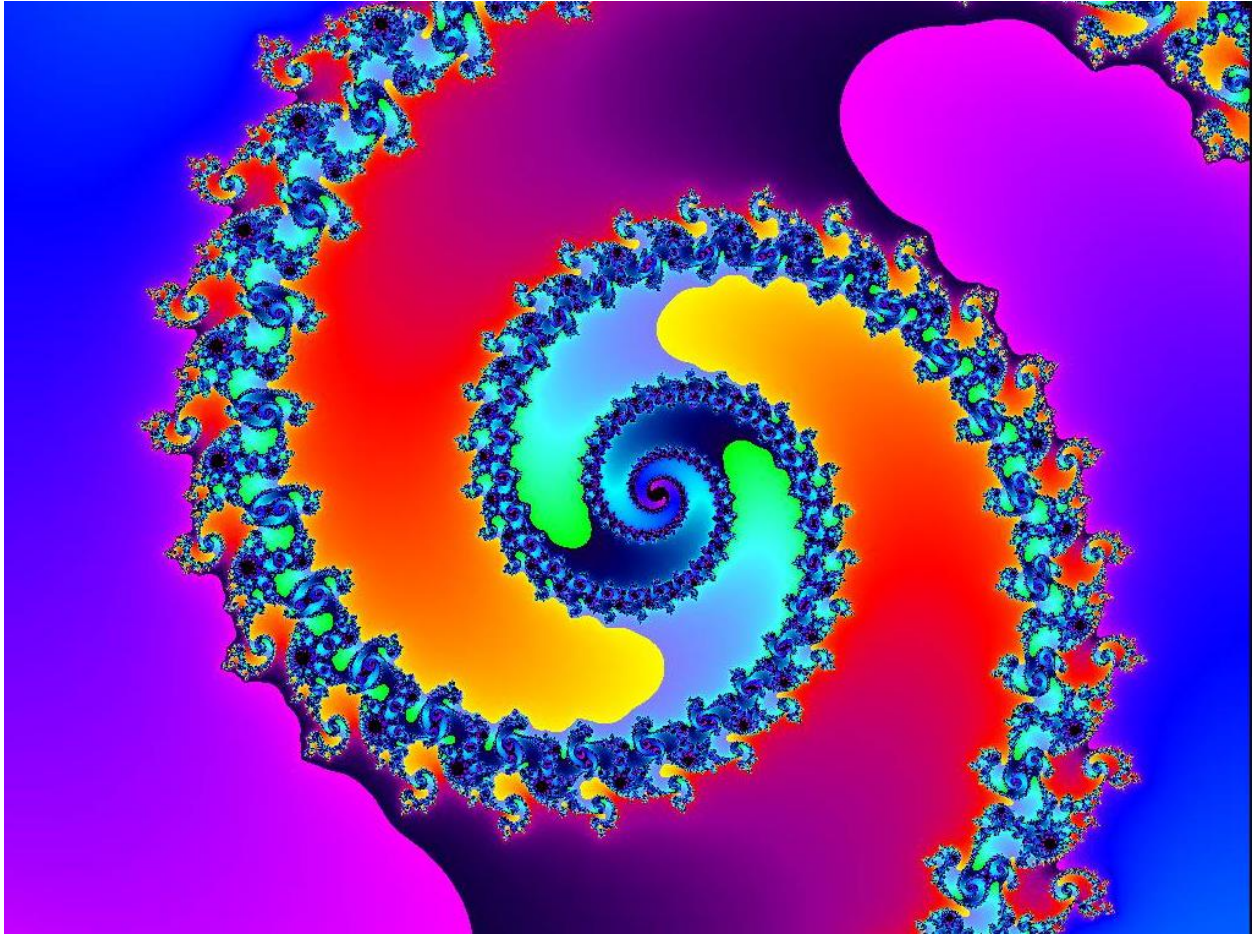


MATH 201: PREPARING FOR TEST 3

Hammack: Chapters 11, 12, and 14 (possibly excluding 14.4)
Review chapters 7 and 9

- functions: well-defined; domain, range, codomain
- functions induced on $\mathcal{P}(X)$ by $f: X \rightarrow Y$, image, preimage
- Fermat's little theorem and modular arithmetic
- surjective, injective, bijective maps;
special case: finite set, combinatorial questions
- pigeonhole principle (revisited)
- composition of functions, (inverse functions), image, preimage
- reflexive, symmetric, transitive properties of a relation
- equivalence relations, equivalence classes, and partitions
- closure properties of sets under binary operations.
- cardinality: countably infinite sets; uncountable sets; properties
- Cantor's diagonal argument
- Cantor's theorem on $\mathcal{P}(X)$



fractal