Leonhardi's Last Lecture

Steve

- Dinky town, Concordia - Moorhead (Math/Phil/English)
  - ↳ try different things
- taught in West Cameroon, actuary, graduate school, logic
- taught in PA, Moravian College, then WSU
- Mathematics is a human activity

Favorite theorems!

- ↳ There is something to prove!
- ↳ main idea can be understood w/o expertise
- ↳ interesting proof
- ↳ uses an insightful lemma
- ↳ important for both theory and application

1st place: Fermat's Little theorem

2nd place: Lagrange's theorem

3rd place: there exist truly unprovable math statements

- ↳ pt I: there are statements that are true but unprovable
- pt II: "Mathematics is consistent." is one of these sentences
- ↳ key idea: self-reference leads to a paradox

Leonhardi's Last Lectures

Lagrange's theorem:

(# elts. G) = (# cosets) · (# elts. H)

↳ the pizza theorem

total slices = (# people) · (# slices per person)

· Key idea: each coset has the same number of elements!

↳ partition: do not have people fight over the same piece of pizza

Fermat's little theorem (1640)

↳ simplifies modular exponentiation for any prime mod p

· Efficiently computes powers $a^x \pmod m$

· Coding theory (transmitting info accurately and detects errors)

· Cryptography (keep things private)

· Key idea: list of numbers... theory beats brute force

False Summits (local but not global maximums)

· there is always something more!

· be present, enjoy the moment

· Enjoy the whole journey

· prioritize health and relationships

· practice gratitude and compassion

· "Time is the currency of life"

· things sweeten up... there is good in every day