E

D

Lemma 2.17

Thm
Cluster C

Thm Cluster
B

Thm Cluster
A

The Research level

The teaching range

The Solid land of Calculus
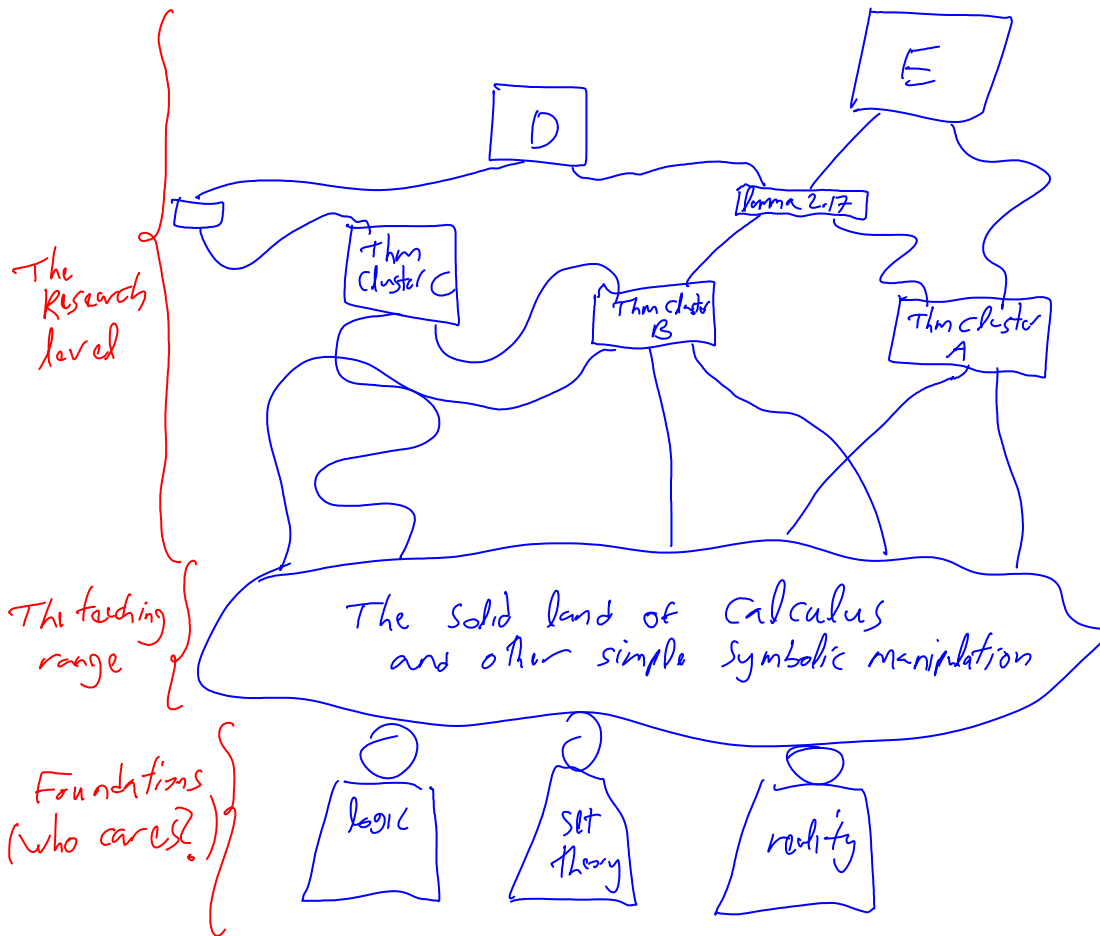and other simple Symbolic manipulation

Foundations
(who cares?)

logic

Set
Theory

reality

Research mathematics is happily standing on a web
of infallible infinitly strong totally rigid and never
corroding xarcon—nanotubes of argument threads;
any cluster of mathematical knowledge might
be totally dependent on several of those long and
winding nano-tubes, yet it is so solid it can
support arbitrarily many other nano-tubes and
theorem clusters.

This completely ignores the nature of humans !
Climbing to the top [where feeding occurs]
requires years of taking and gymnastics.
In practice, most of us cheat here and there,

so we are no longer in the unique field of human thought in which anybody can trace everything (s)he uses to the basic principles. We often don't even know the length of thread that we have skipped.

Due to the hasty nature of our climbing, many sections of nano-tube and even some knowledge clusters remain unvisited and unmaintained. Can we really trust their infinite strength? Remember, the were created by human with career concerns, are referred by other humans with other things on their mind.

Yet we give credit only to the first proof, we don't care about "cosmetic improvements", shortcuts and alternative paths up, or about "experimental verifications". We tend to write things up before we have fully digested them, hence our nano tube are too long and winding and our dependencies to many, and we defend our territory against improvements and re-writes. We only talk about our latest.

(Aside: there is a similar problem with "library inclusions" in computer science, which leads to "bloating").