

Secularization in Mathematics

During the scientific revolution

- Kepler wrote that “Geometry, being part of the divine mind from time immemorial...being God himself...has supplied God with the models for the creation of the world.”
- Newton saw his work on gravity as explaining how God managed the physical universe.
- Leibniz said that God could not abolish mathematical truths without abolishing himself.

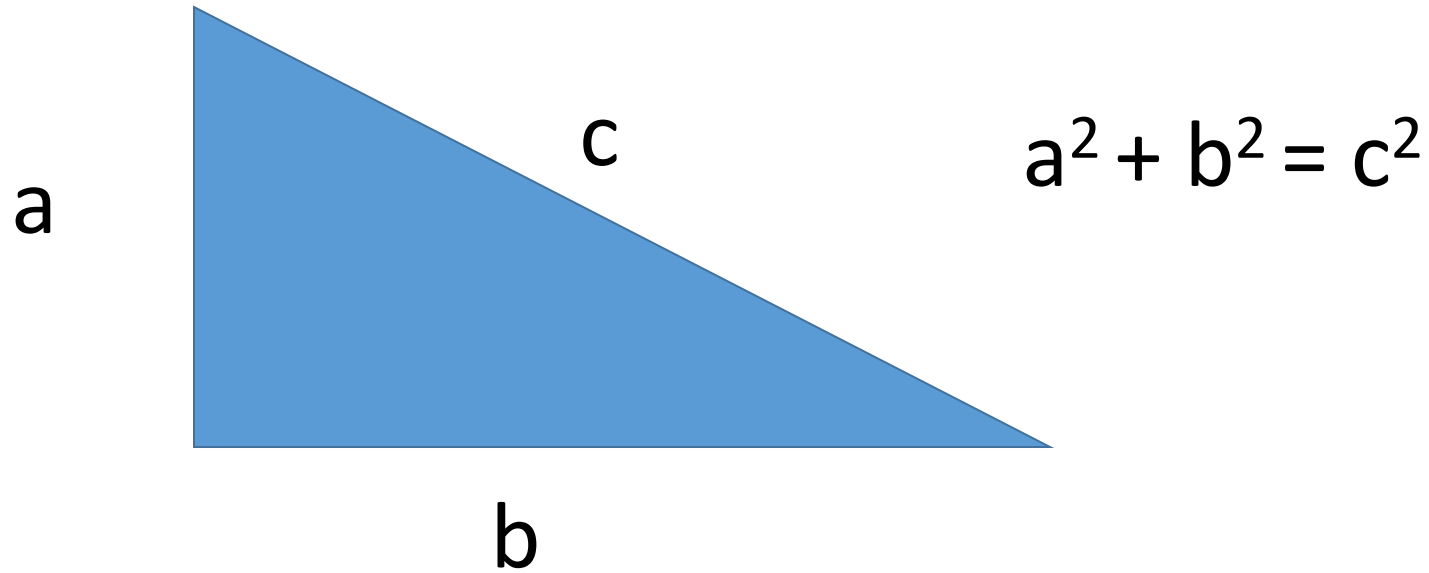
But then came the Enlightenment.

What Augustus deMorgan advocated c. 1850:

Mathematicians would have to sacrifice the age-old transcendental characterization of their discipline. They could no longer claim that mathematics was a divine language because it then became a proper subject for clergymen and mystics as well; they could no longer assert that mathematics was perfect and infallible because it then became a new dogmatic church like the one they had struggled against; no longer could they even flaunt the supreme precision of mathematics because that was just the sort of hubris they disparaged in contemporary intellectual discourse.

Daniel Cohen, *Equations from God*

The technical content of mathematics was unaffected by this changed view of its nature, for example, the Pythagorean theorem:



Nothing in the statement of the theorem or its proof involves any theological assumption.

But views of the ontology of mathematics were greatly affected. Common 20th C. views:

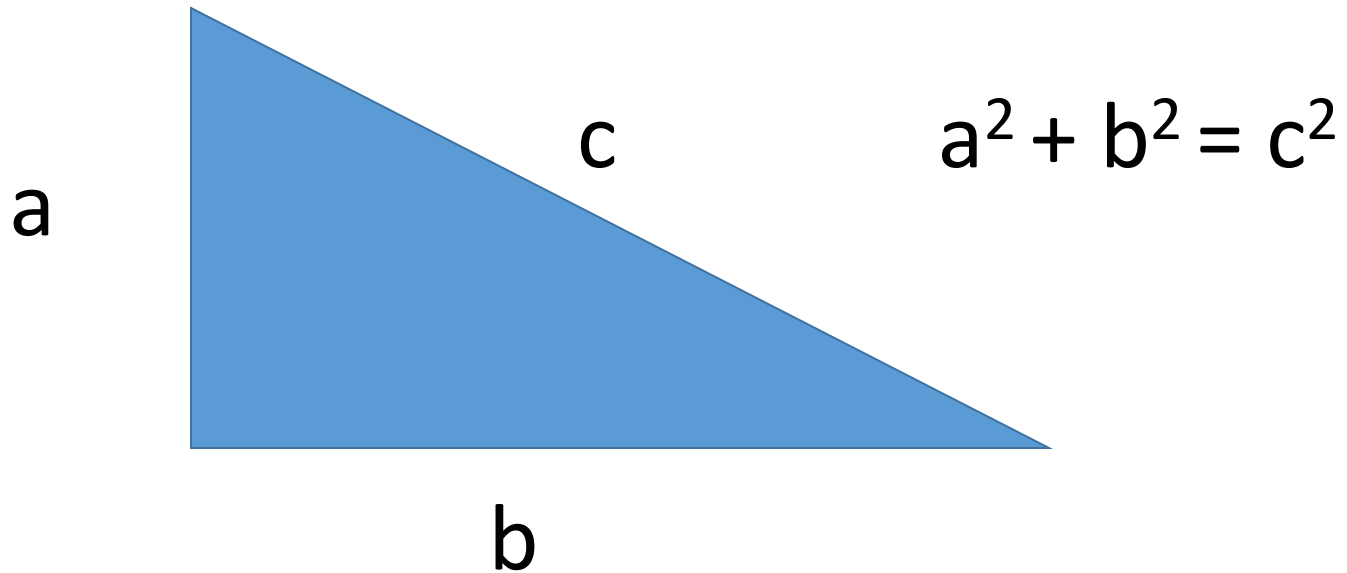
- Math has no meaning beyond itself.
 - It tells us how we think.
- It expresses patterns found in nature.

In all of these, it is a technical subject that has no transcendence.

How would a Christian approach differ?

The technical content would be the same.

Recall the Pythagorean Theorem:



But the meaning of it would be very different

- Augustine – the basic truths of numbers are eternal, unchanging, and uncreated - they are part of God's nature.
- Some Christians argue that, while eternal and unchanging, they are created and hence could have been other than they are.

Implications

- Whether created or not, mathematics is deeply rooted in God. It is rich in meaning – its beauty, order, subtlety, and fruitfulness in understanding nature lead us to worship.
- It is very purposeful – is a key part of human responsibility to be stewards of creation.
 - Leads to different values in mathematics itself.

Practical suggestions

The problem:

- The difference between secular and Christian approaches to academic learning is enormous.
- Faculty are generally trained in institutions in which the disciplines are built around secular assumptions.
- Hence Christian faculty, especially those that are young, are typically only dimly aware of these differences, have not explored them with care, and have not been able to integrate them into their thinking about their discipline nor their teaching.

The solution:

Time, resources, and willingness

Institutional willingness

Institutions need to:

- Recognize that helping faculty to think Christianly about their disciplines is a high priority; for a Christian institution, perhaps the highest.
- Build resources to support such development into budgets.

Time

- Institutions should provide time in a faculty member's load for development of a Christian perspective.
- Faculty and administrations need to accept that this development will take several years.
- Faculty need to allow time for study and for travel to meetings and conferences that will aid their development.

Resources

Institutions need to:

- Develop a library of written materials that will help
 - Provide funds for travel
 - If possible, provide mentors
- Allow time in faculty loads for development – not first year, probably second year
 - Encourage use of on-line resources.
- Encourage membership in professional organizations that develop Christian perspectives

Encouraging faculty willingness

Institutions need to:

- Aim to hire people who have such interests.
- Provide incentives such as release time, travel funds
- Provide specific goals such as a progress report at the end of the second year, a major paper by tenure time.
- Reward integrative scholarship in the same way as more conventional scholarship.
- Expect all faculty to be able to articulate a Christian perspective on their discipline, but recognize that many (most?) will not be producing perspectival scholarship.