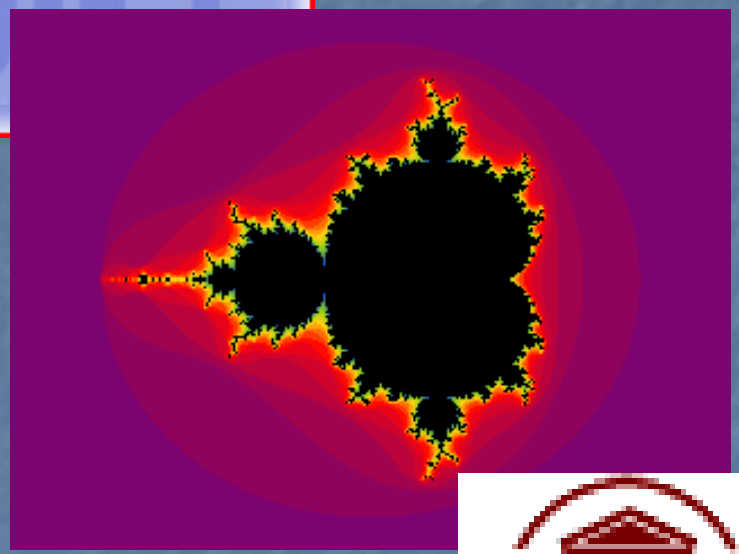
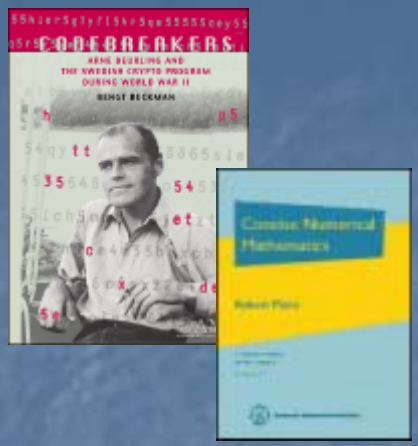
Jstor / Ams

Archiving partnership from AMS view

American Mathematical Society



- Founded in 1888
- Has about 28,000 members (worldwide)
- About 220 employees
- Annual budget ~$21M
- 75% of revenue from publications



Publish

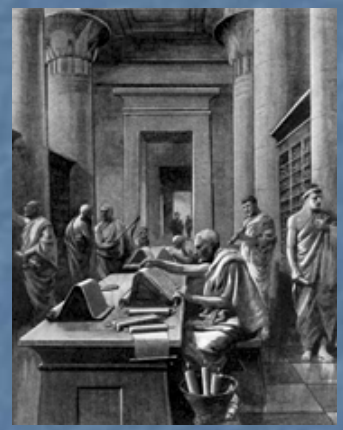
- About 100 new titles/yr (>3000 in print)
- Large database (Math Reviews) 1940-
- About 10 journals (distribute others)
- 4 ***main*** journals (one from 1900-)
- All online in1996—Back volumes?

Mathematical Reviews

Partnered with JSTOR in 1996.

- JSTOR digitized four primary journals
- Comprises almost 400,000 pages
- Advantages:
  - Older material important for mathematics
  - (No clearway to recover $800,000 initial cost)

Archiving Requires Redundancy



- Hasn't changed in moving from paper to electronic
- JSTOR is a **natural** partner
  - (already working together)
- We will soon pass *recent* electronic versions to JSTOR for archiving
- **<u>One part of our archiving</u>**

BUT...

- Archiving is complex
- Not merely “placing good copies in the hands of multiple organizations”
- Additional problems, especially for STM publishing
- Essence of archiving is **multiplicity** ... not just multiple copies

Mathematics

$$\frac{dy}{dx} = 2\pi i \int e^{t} \frac{\delta y}{\delta x} dt - \lim_{\delta x \to 0} f(x)$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\sum_{i=1}^{n} X_i = \sum_{i=1}^{n} X_i Y_i - \sum_{i=1}^{n} (X_i - \bar{X})^2 \cong \frac{x - \mu}{\sigma} \sum_{i=1}^{n} X_i^2$$

TeX code

(red portion)

```
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x = \frac{{ - b \pm \sqrt {b^2  - 4ac}
   }}{{2a}}
\]
```

MathML code

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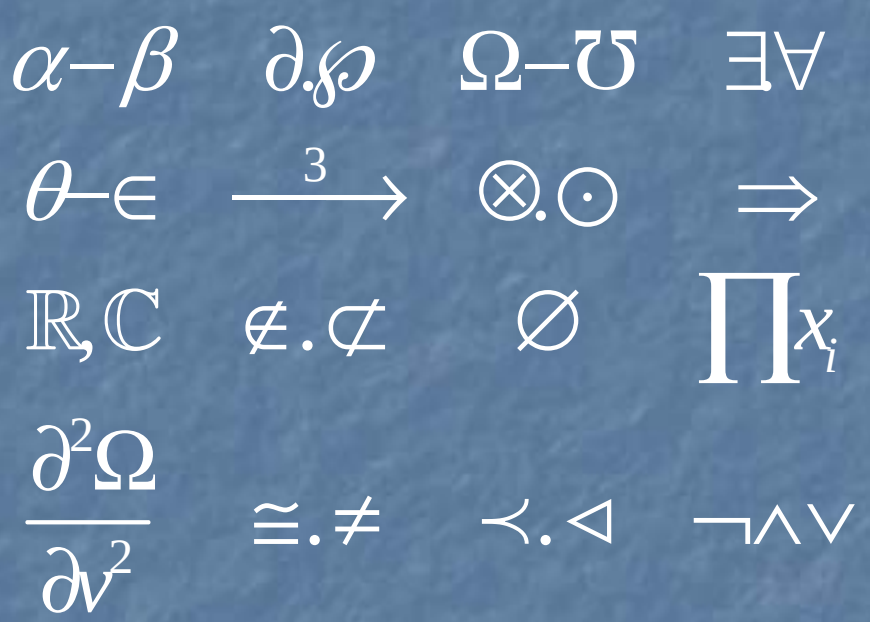
Mathematics: Glyphs & Things

- Unicode
- ISO 10646
- TeX, LaTeX 2e
- MathML 1.0
- Graphics TIFF, EPS
- Standards



Archiving for the Future

- Archiving means preserving material in a **useable** form (not merely uncorrupted)
- **Useable** means it will function in future environments
- Must preserve (part of) environment as well as data itself
- (Forget mathematics: Just consider graphics formats)

Archiving Requires ...

- Preserving (uncorrupted) data
- Preserving (part of) the environment
- Updating when necessary

- Problem...
  - We know what data to preserve...
  - But we DON'T know what parts of the environment to save
  - And we have little experience with updating (but we know it's expensive)

Moral?

- Multiplicity ...
  - multiple copies
  - in multiple places
  - with multiple environments
  - and multiple incentives for updating
  - and multiple kinds of expertise
- Need a practical way to achieve all this

JSTOR & Publishers

- Slightly different goals
- Not quite the same expertise
- Incentives vary slightly
- ... and that's why JSTOR and the publishers (or scientific societies) are such a good fit