

Assignment 1: Week of January 8

Egyptian Mathematics

Readings from Calinger:

1. From *A Mathematician's Apology* – G. H. Hardy (p. 1).
2. Paragraph one of *Mathematics as an Element of the History of Thought* – Alfred North Whitehead (p. 2).
3. Protomathematics in the Late Age of Stone and in Ancient Mesopotamia and Egypt – Calinger (pp. 7 – 13).
4. Readings 2, 3, 4: Egyptian mathematics (Rhind and Moscow papyri), mathematics in the Bible (pp. 26–35)

Other reading: Notes by Hugo Rossi

Note. Reading assignment 2 will consist primarily of Calinger 1: From *The Exact Sciences in Antiquity*, by Otto Neugebauer, pp. 16–26. See also the notes on Babylonian mathematics passed out on the first day of class. We will study the transcriptions of clay tablets reproduced there.

Problems: (due Thursday, January 18)

Here are the definitions of the symbols used to write numbers in Egyptian hieroglyphics.

$$\begin{aligned}
 | &= 1; \quad \cap &= 10; \quad \text{C} &= 100 \\
 \text{⌒} &= 1,000; \quad \text{⌒} &= 10,000; \quad \text{⊖} &= 100,000 \\
 \text{⌒} &= 1,000,000
 \end{aligned}$$

Use the definitions to do the problems below.

1. Write in hieroglyphic: 53, 324, 2047
2. Translate: $\text{⌒} \text{⌒} \text{⊖} \text{⊖} \text{⊖} \text{⌒} \text{⌒} \text{⌒}$,
 $\text{C} \cap \cap \cap \text{|||}$
3. Compute: $\text{C} \cap \cap \text{|||} + \text{C} \text{⌒} \begin{matrix} \cap \cap \cap \\ \cap \cap \cap \end{matrix} \text{|||} = ?$
 $\text{|||} \times \begin{matrix} \text{|||} \\ \text{|||} \\ \text{|||} \end{matrix} = ?$
4. Make up a problem of your own and carry it out in Egyptian notation.

