

## HISTORY OF MATHEMATICS

### HOMEWORK 1

- (1) Here are the words for numbers from 1 – 15 in an old Celtic language (Welsh).

1	yan	6	sethera	11	yanadik
2	tan	7	lethera	12	tanadik
3	tethera	8	hovera	13	tetheradik
4	pethera	9	covera	14	petheradik
5	pimp	10	dik	15	bumpit

What do you think are the words for the numbers 16 – 19? Describe two plausible possibilities and guess which one they were using.

- (2) Here are the Danish words for some numbers:

1	en	10	ti	60	tre-sinds-tyve
2	to	20	tyve	70	halv-fir-sinds-tyve
3	tre	30	tredive	80	fir-sinds-tyve
4	fire	40	fyrre	90	half-fem-sinds-tyve
5	fem	50	halv-tred-sinds-tyve	100	hundrede

Explain the meaning of the words for 50 – 90.

- (3) Write  $\frac{p}{11}$  as Egyptian fractions for  $p = 2, 3, \dots, 10$ .
- (4) Write the following fractions in the Egyptian system:  $\frac{2}{11}, \frac{3}{13}, \frac{4}{13}, \frac{5}{21}$ .
- (5) Write  $\frac{3}{3k+2}$  as the sum of two Egyptian fractions.
- (6) Write the numbers 35 and  $\frac{1}{2}$  in the Babylonian system.
- (7) The number 1;24,51,10 (see the notes for an explanation) occurs in a Babylonian manuscript (a tablet, actually). Compute its decimal value – do you recognize the number?
- (8) Read the accounts of the destruction of the library of Alexandria in
- <http://www.bede.org.uk/library.htm>
  - <http://www.ehistory.com/world/articles/ArticleView.cfm?AID=9>
- Summarize (say on half a page).