

## Assignment 2: Week of January 15

### Babylonian Mathematics

**Reading:** Current lecture outline + §2 of Notes (the Number System). Both are handouts. Finish Neugebauer in Calinger.

**Note:** As part of your work, I would like you to keep a well-organized notebook with your notes, worked out problems, handouts, etc. Keeping a satisfactory notebook counts as two problem sets.

**Problems.** Due Thursday, January 25.

1. Do the problems of Figure 8, page 9 of the Notes.
2. Verify lines 10, 11, 13, and 17 of Figure 6 of the Notes (Aaboe's tablet).
3. Verify lines 2–16 of the table of reciprocals on page 17 of Calinger (Neugebauer's article).
4. Find  $1/7$  in sexagesimal notation to three places. It will have the form  $1;a,b,c$ .
5. Heron says that you can find an approximation differing by much less than  $\frac{1}{36}$ . Follow his suggestion. What do you get? How big is the difference?
6. Find  $\sqrt{3}$  as a fraction using precisely the steps in Heron's computation of  $\sqrt{720}$ . Show all your work.
7. Using a calculator (but only the four operations of  $+$ ,  $-$ ,  $\times$  and  $\div$ ), compute  $\sqrt{3}$  to three decimal places using Heron's method.