Math 105 **BONUS** *Problem of the Day #1* (**5 points**)

SOLUTIONS

Base 7 Arithmetic

In Base 7 there are exactly 7 digits: 0, 1, 2, 4, 5, 6. If we add one more to 6 we get 10_{seven}. Continuing on, we would have 11_{seven}, 12_{seven}, 13_{seven}, ..., 16_{seven} and 20_{seven}.

Compute the following:

1. $$\begin{array}{rr} & 34_{seven} \\ + & 44_{seven} \\ \hline & 111_{seven} \end{array}$$

2. $$\begin{array}{rr} & 613_{seven} \\ + & 144_{seven} \\ \hline & 1060_{seven} \end{array}$$

3. $$\begin{array}{rr} & 613_{seven} \\ - & 144_{seven} \\ \hline & 436_{seven} \end{array}$$

4. $$\begin{array}{rr} & 14_{seven} \\ \times & 23_{seven} \\ \hline & 355_{seven} \end{array}$$

5. $$\begin{array}{rr} & 642_{seven} \\ \times & 5_{seven} \\ \hline & 4503_{seven} \end{array}$$