

# 17-1750 Shameless Mathematica on Monday Sep 18, Week 2-1: EIWL 1-4, Chu's Project, Many Fibonacci Programs

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EIWL 1-4, then Chu's project, then Fibonacci:

The failure to compute  $F_{40}$  was an insult. Hence...

- \* Program already written.
- \* while / Do / For loops w/ "prev" & "curr."
- \* While loop w/ a  $\{f_0, f_1, f_2, f_3, \dots\}$
- \* Replace Repeated on  $\begin{Bmatrix} F(n-1) \\ F(n) \end{Bmatrix}$
- \* Same but w/ NestWhile.
- \* Sum of binomial coefficients.
- \* Solve for the explicit formula, then use it.
- \* Series  $\frac{1}{1-x-x^2}$
- \* Matrix power / also by hand!
- \*  $F(2n) = F(n)^2 + F(n-1)^2$      $F(2n+1) = F(n)(F(n+1) + F(n-1))$
- \* Categorical version!