Pell Numbers: $P_0 = 0,\ P_1 = 1,\ P_{n+1} = 2P_n + P_{n-1}$

Lucas Numbers: $Q_0 = 2,\ Q_1 = 2,\ Q_{n+1} = 2Q_n + Q_{n-1}$

More Identities:

$3n$: $P_{3n} = a P_n^3 + (-1)^n b P_n$

$5n$: $P_{5n} = a P_n^5 + (-1)^n b P_n^3 + c P_n$

$7n$: $P_{7n} = a P_n^7 + (-1)^n b P_n^5 + c P_n^3 + (-1)^n d P_n$

q_n: $P_{qn} = a P_n^q + (-1)^n b P_n^7 + c P_n^5 + (-1)^n d P_n^3 + e P_n$

etc.

Idea: You can use Table[...] to produce a list of equations.

NOTE: In the paper, you will see Binomial Coefficients

$$\binom{p}{q} = \frac{p!}{q!(p-q)!}$$

Help Session: RNS 204, Wednesdays 7-8pm