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1) In the proposition as stated at the top of page 7 the use of "uniform" is incorrect. The correct proposition is

**Proposition.** The Gaussian polynomial \(\binom{n}{t}_q\) is the product of exactly those cyclotomic polynomials \(F_j(q)\) for which \(\bar{t} > \bar{n}\), modulo \(j\).

This suggests splitting the Fourier transform sum into a sum of sums over the roots of the cyclotomic polynomials. Let us define

\[
\bar{f}(j, n, t, m) = \sum_{F_d(\omega) = 0} \omega^{(t+1)/2 - j} \binom{n}{t}_\omega
\]

so

\[
f(j, n, t, m) = \frac{1}{m} \sum_{d | m} \bar{f}(j, n, t, d)
\]

Now the proposition implies that if \(t \mod d > n \mod d\) then \(\binom{n}{t}_\omega\) equals zero for all \(\omega\) that are roots of the \(d\)'th cyclotomic polynomial. So \(f(i, n, t, d) = 0\) for all \(i\).

This allows us to answer question 4b by saying that if \((n, t, m)\) has only one bad divisor \(d\) then

\[
f(i, n, t, m) = \frac{1}{m} (\bar{f}(i, n, t, 1) + \bar{f}(i, n, t, d))
\]

\[
= \frac{d}{m} (1/d)(\bar{f}(i, n, t, 1) + \bar{f}(i, n, t, d))
\]

\[
= \frac{d}{m} f(i, n, t, d)
\]

2) The general conjecture as stated is false, as can be seen by considering \(f(16, 6, 5)\). There the bad divisors are 3 and 5. The general conjecture would then imply that \(f(16, 6, 15)\) is a linear combination of \(f(15, 6, 3)\) and \(f(15, 6, 5)\) (extended appropriately). Computation reveals that the combination must be \((1/3)f(15, 6, 5) + (1/5)f(15, 6, 3)\), further computation shows that this combination does not work.

The General Conjecture might be true if we allow 1 to be included in the set of bad divisors.