4. ACKNOWLEDGEMENTS

It follows at once that

$$h(-n) = \frac{1}{2} \sum_{i=0}^{\frac{j-1}{2}} \sum_{a=\left[\frac{4in}{j}\right]+1}^{\left[\frac{(4i+2)n}{j}\right]} \left(\frac{-4n}{a}\right)$$

if $\left(\frac{-4n}{j}\right) = +1$, and

$$h(-n) = \frac{1}{2} \sum_{i=1}^{\frac{j-1}{2}} \sum_{a=\left[\frac{(4i-2)n}{j}\right]+1}^{\left[\frac{4in}{j}\right]} \left(\frac{-4n}{a}\right)$$

if $\left(\frac{-4n}{j}\right) = -1$.

3. Remarks

In Bruce Berndt's paper "Classical Theorems on Quadratic Residues" [1], he uses the following notation:

$$S_{ji} = \sum_{\frac{(i-1)k}{j} < n < \frac{ik}{j}} \chi(n) .$$

Using this notation, we can rewrite the class number formulae as follows:

1. If $\left(\frac{-4n}{j}\right) = +1$, then we have

$$h(-n) = \frac{1}{2} \sum_{i=0}^{\frac{j-1}{2}} S_{j,2i+1} .$$

2. If $\left(\frac{-4n}{j}\right) = -1$, then we have

$$h(-n) = \frac{1}{2} \sum_{i=1}^{\frac{j-1}{2}} S_{j,2i} .$$

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