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Michael E Hoffman* (meh@usna.edu), U. S. Naval Academy, Annapolis, MD 21402. *Labeled Posets, Iterated Integrals, and Nested Sums*. Preliminary report.

Recently S. Yamamoto has developed an elegant way to represent iterated integrals involving the forms dt/t and $dt/(1-t)$ using 2-labeled posets. We consider two extensions. First, we extend Yamamoto's notion to get a correspondence between $(r+1)$ -labeled posets and iterated integrals involving dt/t and $dt/(\epsilon^{-i}-t)$, $0 \leq i \leq r-1$, where ϵ is a primitive r th root of unity. Second, we develop an analogous formalism giving a correspondence between nested sums and posets labeled with the positive integers. (Received January 09, 2015)