1073-05-120 **Jerrold R. Griggs*** (`j@sc.edu`), Department of Mathematics, University of South Carolina, Columbia, SC 29208, and **Wei-Tian Li** and **Linyuan Lu**. *Forbidden subposets with nice answers.* Preliminary report.

We consider the problem of determining the largest size $\mathrm{La}(n, H)$ of a family of subsets of $[n] := \{1, \ldots, n\}$ that contains no (weak) subposet isomorphic to a given poset H. For some posets H we may know $\mathrm{La}(n, H)$ exactly for all $n > n_o$, and in such cases, it may be simply the sum of the k middle binomial coefficients in n, where k and n_o depend on H. This is true for chains and for the four-element butterfly poset. For other posets H, such as the three-element poset V, we can describe the asymptotic behavior of $\mathrm{La}(n, H)$, even though it appears to be exceedingly difficult to determine $\mathrm{La}(n, H)$ more precisely. In all known cases, we have $\lim_{n\to\infty} \mathrm{La}(n, P)/\binom{n}{\lfloor n/2 \rfloor}$ exists and is integral. Finally, there are posets H that seem to be more difficult, such as the four-element diamond D_2, for which the existence of $\lim_{n\to\infty} \mathrm{La}(n, P)/\binom{n}{\lfloor n/2 \rfloor}$ remains open. In recent progress, we can add various infinite families of posets H to the list of those which can be completely solved. (Received July 29, 2011)