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**Asymptotics for the Probability of Connectedness and
the Distribution of Number of Components**

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Abstract Let ρ_n be the fraction of structures of “size” n which are “connected”; e.g. (a) the fraction of labeled or unlabeled n -vertex graphs having one component, (b) the fraction of partitions of n or of an n -set having a single part or block, or (c) the fraction of n -vertex forests that is convenient to distinguish three cases depending on the nature of the power series for the structures: purely formal, convergent on the circle of convergence, and other. We determine all possible values for the pair $(\liminf \rho_n, \limsup \rho_n)$ in these cases. Only in the convergent case can one have $0 < \lim \rho_n < 1$. We study the existence of $\lim \rho_n$ in this case.

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