Monte Carlo renormalization group method: We start with the action for the theory: $S = \sum_i K_i O_i$ which is a sum of lattice operators O_i built out of lattice fields, with "couplings," K_i, which are constant coefficients. A simulation is then done on a "fine" lattice of size $(2N)^4$ where $2N$ is the number of lattice sites in each of the four dimensions. We measure observables X_j^n, blocked n times, from the results of these simulations. Here "blocking" refers to an intelligent sort of averaging of the lattice fields. Next simulations are done on "coarse" lattices of size N^4, so that the number of sites in each direction is half of what it was on the "fine" lattice. These simulations are done with couplings K_i', which will in general be different from K_i. We measure observables X_j^{n-1} blocked $n-1$ times. We repeat this until we find the couplings K_i' such that the observables measured on the fine lattice agree with those measured on the coarse lattice. Once this is achieved, we say that the couplings K_i' and K_i are "matched." This determines the renormalization group flow of the bare couplings, and it is done using Monte Carlo simulations (Monte Carlo integration to estimate the path integral that describes the quantum field theory); hence the name Monte Carlo renormalization group.