MAGIC SQUARES

9! arrangements

1. **States:** assignment of $1, 2, \ldots, n^2$ into the n^2 boxes

   in general: $n^2!$ states

2. **Transitions/Moves:** pick two entries at random and swap them

3. **Function to minimize on the states:**

   target: $\frac{1}{2}n(n^2+1)$

   - compute row/col/diag sums, multiply them together

     Max product corresponds to magic square

   - compute row/col/diag sums, count how many equal target

   - compute differences between row/col/diag sums with the target

     Take the: sum of the differences?

     average of the differences?

     Max difference?