标签 矩阵快速幂 下的文章

「Luogu 1357」花园 (https://blog.orzsiyuan.com/archives/Luogu-1357-Garden/)

> 题目链接：Luogu 1357 (https://www.luogu.org/problemnew/show/P1357)

小 L 有一座环形花园，沿花园的顺时针方向，他把各个花圃编号为 1 到 n。他的环形花园每天都会换一个新花样，但他的花园都不外乎一个规则，任意相邻 m 个花圃中有不超过 k 个 C 形的花圃，其余花圃均为 P 形的花圃。

请帮小 L 求出符合规则的花园种数，答案对 $10 ^ 9 + 7$ 取模。

数据范围：$2\le n\le 10 ^ {15}$，$2\le m\le 5$，$1\le k<m$。

Siyuan (https://blog.orzsiyuan.com/author/1/) 2019 年 03 月 18 日

热门文章

(https://blog.orzsiyuan.com/archives/ZJOI-2019/) ZJOI 2019 游记 (https://blog.orzsiyuan.com/archives/ZJOI-2019/) 6051

(https://blog.orzsiyuan.com/archives/hehezhou-AK-CSP-2019/) CSP 2019 算法模板复习 (https://blog.orzsiyuan.com/archives/hehezhou-AK-CSP-2019/) 2892

(https://blog.orzsiyuan.com/archives/Polynomial-Template/) 「算法笔记」多项式模板 (https://blog.orzsiyuan.com/archives/Polynomial-Template/) 1080

(https://blog.orzsiyuan.com/archives/SDOI-2017-Number-Table/) 「SDOI 2017」数字表格 (https://blog.orzsiyuan.com/archives/SDOI-2017-Number-Table/) 1028

(https://blog.orzsiyuan.com/archives/TJOI-2019-Sing-Dance-Rap-and-Basketball/) 「TJOI 2019」唱、跳、rap 和篮球 (https://blog.orzsiyuan.com/archives/TJOI-2019-Sing-Dance-Rap-and-Basketball/) 843

Rap-and-Basketball/)

博客信息

文章数目	**187**
评论数目	**243**
运行天数	**1年25天**
最后活动	**4 个月前**

标签云

Codeforces (https://blog.orzsiyuan.com/tag/Codeforces/)
数据结构 (https://blog.orzsiyuan.com/tag/Data-Structure/)
动态规划 (https://blog.orzsiyuan.com/tag/Dynamic-Programming/)
数论 (https://blog.orzsiyuan.com/tag/Number-Theory/) **图论 (https://blog.orzsiyuan.com/tag/Graph-Theory/)**
贪心 (https://blog.orzsiyuan.com/tag/Greedy/) **多项式 (https://blog.orzsiyuan.com/tag/Polynomial/)**
字符串 (https://blog.orzsiyuan.com/tag/%E5%AD%97%E7%AC%A6%E4%B8%B2/)
LOJ (https://blog.orzsiyuan.com/tag/LOJ/) **FFT NTT (https://blog.orzsiyuan.com/tag/FFT-NTT/)**
网络流 (https://blog.orzsiyuan.com/tag/Network-Flow/) **LCT (https://blog.orzsiyuan.com/tag/LCT/)**
计数 (https://blog.orzsiyuan.com/tag/%E8%AE%A1%E6%95%B0/)
后缀数组 (https://blog.orzsiyuan.com/tag/%E5%90%8E%E7%BC%80%E6%95%B0%E7%BB%84/)
线段树 (https://blog.orzsiyuan.com/tag/Segment-Tree/)
构造 (https://blog.orzsiyuan.com/tag/%E6%9E%84%E9%80%A0/) **HDU (https://blog.orzsiyuan.com/tag/HDU/)**
SPOJ (https://blog.orzsiyuan.com/tag/SPOJ/) **Luogu (https://blog.orzsiyuan.com/tag/Luogu/)**
BZOJ (https://blog.orzsiyuan.com/tag/BZOJ/) **树状数组 (https://blog.orzsiyuan.com/tag/Binary-Indexed-Tree/)**
CDQ 分治 (https://blog.orzsiyuan.com/tag/CDQ-Divide-and-Conquer/)
UOJ (https://blog.orzsiyuan.com/tag/UOJ/) **主席树 (https://blog.orzsiyuan.com/tag/Chairman-Tree/)**
高斯消元 (https://blog.orzsiyuan.com/tag/Gaussian-Elimination/)
莫比乌斯反演 (https://blog.orzsiyuan.com/tag/Mobius-Inversion/)
AtCoder (https://blog.orzsiyuan.com/tag/AtCoder/)
多项式乘法 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E4%B9%98%E6%B3%95/)
并查集 (https://blog.orzsiyuan.com/tag/Union-Find-Set/)
最大流 (https://blog.orzsiyuan.com/tag/Maximum-Flow/)

费用流 (https://blog.orzsiyuan.com/tag/Minimum-Cost/) Splay (https://blog.orzsiyuan.com/tag/Splay/)

离线 (https://blog.orzsiyuan.com/tag/Off-Line/)

二分答案 (https://blog.orzsiyuan.com/tag/Binary-Search-Answer/)

权值线段树 (https://blog.orzsiyuan.com/tag/Weight-Segment-Tree/)

容斥 (https://blog.orzsiyuan.com/tag/%E5%AE%B9%E6%96%A5/)

数论分块 (https://blog.orzsiyuan.com/tag/%E6%95%B0%E8%AE%BA%E5%88%86%E5%9D%97/)

计算几何 (https://blog.orzsiyuan.com/tag/Geometry/) 组合数学 (https://blog.orzsiyuan.com/tag/Combinatorics/)

矩阵 (https://blog.orzsiyuan.com/tag/Matrix/) 最小割 (https://blog.orzsiyuan.com/tag/Minimum-Cut/)

随机化 (https://blog.orzsiyuan.com/tag/Randomization/)

斜率优化 (https://blog.orzsiyuan.com/tag/Slope-Optimization/) NOI (https://blog.orzsiyuan.com/tag/NOI/)

概率期望 (https://blog.orzsiyuan.com/tag/%E6%A6%82%E7%8E%87%E6%9C%9F%E6%9C%9B/)

后缀自动机 (https://blog.orzsiyuan.com/tag/%E5%90%8E%E7%BC%80%E8%87%AA%E5%8A%A8%E6%9C%BA/)

位运算 (https://blog.orzsiyuan.com/tag/%E4%BD%8D%E8%BF%90%E7%AE%97/)

生成函数 (https://blog.orzsiyuan.com/tag/%E7%94%9F%E6%88%90%E5%87%BD%E6%95%B0/)

莫队 (https://blog.orzsiyuan.com/tag/Mo-Algorithm/) BJOI (https://blog.orzsiyuan.com/tag/BJOI/)

线性基 (https://blog.orzsiyuan.com/tag/Linear-Base/) 分块 (https://blog.orzsiyuan.com/tag/Partition/)

凸包 (https://blog.orzsiyuan.com/tag/Convex-Hull/) POJ (https://blog.orzsiyuan.com/tag/POJ/)

平衡树 (https://blog.orzsiyuan.com/tag/Balanced-Tree/)

线性筛 (https://blog.orzsiyuan.com/tag/Euler-Sieve-Method/) FWT (https://blog.orzsiyuan.com/tag/FWT/)

单调栈 (https://blog.orzsiyuan.com/tag/%E5%8D%95%E8%B0%83%E6%A0%88/)

杜教筛 (https://blog.orzsiyuan.com/tag/%E6%9D%9C%E6%95%99%E7%AD%9B/)

多项式指数函数 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E6%8C%87%E6%95%B0%E5%

行列式 (https://blog.orzsiyuan.com/tag/Determinant/)

欧拉函数 (https://blog.orzsiyuan.com/tag/Euler-Function/) 树形 DP (https://blog.orzsiyuan.com/tag/Tree-DP/)

Two Pointers (https://blog.orzsiyuan.com/tag/Two-Pointers/)

模拟退火 (https://blog.orzsiyuan.com/tag/Simulated-Annealing/) NOIP (https://blog.orzsiyuan.com/tag/NOIP/)

偏序 (https://blog.orzsiyuan.com/tag/Partial-Order/) TJOI (https://blog.orzsiyuan.com/tag/TJOI/)

整体二分 (https://blog.orzsiyuan.com/tag/Binary-Search-Whole/) ZJOI (https://blog.orzsiyuan.com/tag/ZJOI/)

积性函数 (https://blog.orzsiyuan.com/tag/Multiplicative-Function/)

RMQ (https://blog.orzsiyuan.com/tag/RMQ/)

决策单调性 (https://blog.orzsiyuan.com/tag/%E5%86%B3%E7%AD%96%E5%8D%95%E8%B0%83%E6%80%A7/)

二分 (https://blog.orzsiyuan.com/tag/%E4%BA%8C%E5%88%86/)

多项式求逆 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E6%B1%82%E9%80%86/)

多项式开根 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E5%BC%80%E6%A0%B9/)

数学归纳法 (https://blog.orzsiyuan.com/tag/%E6%95%B0%E5%AD%A6%E5%BD%92%E7%BA%B3%E6%B3%95/)

多项式自然对数 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E8%87%AA%E7%84%B6%E5%

多项式快速幂 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E5%BF%AB%E9%80%9F%E5%B9

最小圆覆盖 (https://blog.orzsiyuan.com/tag/Smallest-Enclosing-Circle/)

BSGS (https://blog.orzsiyuan.com/tag/BSGS/) 可持久化 (https://blog.orzsiyuan.com/tag/Persistence/)

拉格朗日插值 (https://blog.orzsiyuan.com/tag/Lagrange-Interpolation/)

同余 (https://blog.orzsiyuan.com/tag/Congruence/)

线性同余方程 (https://blog.orzsiyuan.com/tag/Linear-Congruence-Theorem/)

exGCD (https://blog.orzsiyuan.com/tag/exGCD/) CRT (https://blog.orzsiyuan.com/tag/CRT/)

exCRT (https://blog.orzsiyuan.com/tag/exCRT/) 逆矩阵 (https://blog.orzsiyuan.com/tag/Matrix-Inversion/)

最短路 (https://blog.orzsiyuan.com/tag/Shortest-Path/) Floyd (https://blog.orzsiyuan.com/tag/Floyd/)

类欧几里德算法 (https://blog.orzsiyuan.com/tag/Similar-Euclidean-Algorithm/)

叉积 (https://blog.orzsiyuan.com/tag/Cross-Product/) HEOI (https://blog.orzsiyuan.com/tag/HEOI/)

最大子段和 (https://blog.orzsiyuan.com/tag/Maximum-Interval-Sum/)

递推 (https://blog.orzsiyuan.com/tag/Recursion/) 缩点 (https://blog.orzsiyuan.com/tag/Shrinking-Point/)

单调队列 (https://blog.orzsiyuan.com/tag/%E5%8D%95%E8%B0%83%E9%98%9F%E5%88%97/)

重心 (https://blog.orzsiyuan.com/tag/%E9%87%8D%E5%BF%83/)

上下界网络流 (https://blog.orzsiyuan.com/tag/%E4%B8%8A%E4%B8%8B%E7%95%8C%E7%BD%91%E7%BB%9C%E6%B5

AHOI (https://blog.orzsiyuan.com/tag/AHOI/)

倍增 (https://blog.orzsiyuan.com/tag/%E5%80%8D%E5%A2%9E/)

二分图 (https://blog.orzsiyuan.com/tag/%E4%BA%8C%E5%88%86%E5%9B%BE/)

差分 (https://blog.orzsiyuan.com/tag/%E5%B7%AE%E5%88%86/)

Dirichlet 卷积 (https://blog.orzsiyuan.com/tag/Dirichlet-%E5%8D%B7%E7%A7%AF/)

多省联考 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E7%9C%81%E8%81%94%E8%80%83/)

优先队列 (https://blog.orzsiyuan.com/tag/%E4%BC%98%E5%85%88%E9%98%9F%E5%88%97/)

启发式合并 (https://blog.orzsiyuan.com/tag/%E5%90%AF%E5%8F%91%E5%BC%8F%E5%90%88%E5%B9%B6/)

Trie (https://blog.orzsiyuan.com/tag/Trie/) Tarjan (https://blog.orzsiyuan.com/tag/Tarjan/)

线段树合并 (https://blog.orzsiyuan.com/tag/%E7%BA%BF%E6%AE%B5%E6%A0%91%E5%90%88%E5%B9%B6/)

SDOI (https://blog.orzsiyuan.com/tag/SDOI/) 交互 (https://blog.orzsiyuan.com/tag/%E4%BA%A4%E4%BA%92/)

欧拉路径 (https://blog.orzsiyuan.com/tag/%E6%AC%A7%E6%8B%89%E8%B7%AF%E5%BE%84/)

多项式除法 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E9%99%A4%E6%B3%95/)

多项式取模 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E5%8F%96%E6%A8%A1/)

多项式三角函数 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E4%B8%89%E8%A7%92%E5%

通项公式 (https://blog.orzsiyuan.com/tag/%E9%80%9A%E9%A1%B9%E5%85%AC%E5%BC%8F/)

欧拉定理 (https://blog.orzsiyuan.com/tag/Euler-Theorem/)

Kruskal 重构树 (https://blog.orzsiyuan.com/tag/Extended-Kruskal/)

生成树 (https://blog.orzsiyuan.com/tag/Spanning-Tree/)

矩阵树定理 (https://blog.orzsiyuan.com/tag/Matrix-Tree-Theorem/) LIS (https://blog.orzsiyuan.com/tag/LIS/)

曼哈顿距离 (https://blog.orzsiyuan.com/tag/Manhattan-Distance/)

切比雪夫距离 (https://blog.orzsiyuan.com/tag/Chebyshev-Distance/)

CQOI (https://blog.orzsiyuan.com/tag/CQOI/) 树套树 (https://blog.orzsiyuan.com/tag/Tree-Nested-Tree/)

LCA (https://blog.orzsiyuan.com/tag/LCA/) 质数 (https://blog.orzsiyuan.com/tag/Prime-Number/)

矩阵快速幂 (https://blog.orzsiyuan.com/tag/Matrix-Fast-Power/)

FHQ Treap (https://blog.orzsiyuan.com/tag/FHQ-Treap/) POI (https://blog.orzsiyuan.com/tag/POI/)

Kruskal (https://blog.orzsiyuan.com/tag/Kruskal/) HAOI (https://blog.orzsiyuan.com/tag/HAOI/)

四边形不等式 (https://blog.orzsiyuan.com/tag/%E5%9B%9B%E8%BE%B9%E5%BD%A2%E4%B8%8D%E7%AD%89%E5%B

点分治 (https://blog.orzsiyuan.com/tag/%E7%82%B9%E5%88%86%E6%B2%BB/)

拓扑排序 (https://blog.orzsiyuan.com/tag/%E6%8B%93%E6%89%91%E6%8E%92%E5%BA%8F/)

CodeChef (https://blog.orzsiyuan.com/tag/CodeChef/)

最小流 (https://blog.orzsiyuan.com/tag/%E6%9C%80%E5%B0%8F%E6%B5%81/)

匈牙利算法 (https://blog.orzsiyuan.com/tag/%E5%8C%88%E7%89%99%E5%88%A9%E7%AE%97%E6%B3%95/)

扫描线 (https://blog.orzsiyuan.com/tag/%E6%89%AB%E6%8F%8F%E7%BA%BF/)

CEOI (https://blog.orzsiyuan.com/tag/CEOI/)

长链剖分 (https://blog.orzsiyuan.com/tag/%E9%95%BF%E9%93%BE%E5%89%96%E5%88%86/)

GXOI (https://blog.orzsiyuan.com/tag/GXOI/) GZOI (https://blog.orzsiyuan.com/tag/GZOI/)

USACO (https://blog.orzsiyuan.com/tag/USACO/)

AC 自动机 (https://blog.orzsiyuan.com/tag/AC-%E8%87%AA%E5%8A%A8%E6%9C%BA/)

KMP (https://blog.orzsiyuan.com/tag/KMP/) 暴力 (https://blog.orzsiyuan.com/tag/%E6%9A%B4%E5%8A%9B/)

CTSC (https://blog.orzsiyuan.com/tag/CTSC/)

扩展欧拉定理 (https://blog.orzsiyuan.com/tag/%E6%89%A9%E5%B1%95%E6%AC%A7%E6%8B%89%E5%AE%9A%E7%9

牛顿迭代法 (https://blog.orzsiyuan.com/tag/%E7%89%9B%E9%A1%BF%E8%BF%AD%E4%BB%A3%E6%B3%95/)

泰勒公式 (https://blog.orzsiyuan.com/tag/%E6%B3%B0%E5%8B%92%E5%85%AC%E5%BC%8F/)

多项式反三角函数 (https://blog.orzsiyuan.com/tag/%E5%A4%9A%E9%A1%B9%E5%BC%8F%E5%8F%8D%E4%B8%89%E8

背包 (https://blog.orzsiyuan.com/tag/%E8%83%8C%E5%8C%85/)

区间 DP (https://blog.orzsiyuan.com/tag/%E5%8C%BA%E9%97%B4-DP/)

HNOI (https://blog.orzsiyuan.com/tag/HNOI/) WC (https://blog.orzsiyuan.com/tag/WC/)

鸽巢原理 (https://blog.orzsiyuan.com/tag/%E9%B8%BD%E5%B7%A2%E5%8E%9F%E7%90%86/)

树链剖分 (https://blog.orzsiyuan.com/tag/%E6%A0%91%E9%93%BE%E5%89%96%E5%88%86/)

第二类斯特林数 (https://blog.orzsiyuan.com/tag/%E7%AC%AC%E4%BA%8C%E7%B1%BB%E6%96%AF%E7%89%B9%E6%

二项式定理 (https://blog.orzsiyuan.com/tag/%E4%BA%8C%E9%A1%B9%E5%BC%8F%E5%AE%9A%E7%90%86/)