#include <stdio.h>

#include <string.h>

#define Min(a, b) ((a)<(b)?(a):(b))

long long n, m;

long long p[510], d[510], s[510], a[510];

void mul()

{

long long j, k;

memset(s, 0, sizeof(s));

for (j = 0; j < n; j++)

for (k = 0; k < n; k++)

s[j] = (s[j]+d[k]\*p[(j-k+n)%n])%m;

memcpy(d, s, sizeof(s));

}

void pow(long long k)

{

long long i;

for (i = 30; i >= 0 && !(k&(1<<i)); i--);

memcpy(d, a, sizeof(a));

for (i--; i >= 0; i--)

{

memcpy(p, d, sizeof(d));

mul();

if (k&(1<<i))

{

memcpy(p, a, sizeof(a));

mul();

}

}

}

int main()

{

long long ds, k, i;

while (scanf("%lld%lld%lld%lld", &n, &m, &ds, &k) == 4)

{

memset(a, 0, sizeof(a));

for (i = 0; i < n; i++)

if (Min(i, n-i) <= ds)

a[i] = 1;

pow(k);

for (i = 0; i < n; i++)

scanf("%d", p+i);

memset(a, 0, sizeof(a));

for (i = 0; i < n; i++)

for (k = 0; k < n; k++)

a[i] = (a[i]+d[(k-i+n)%n]\*p[k])%m;

for (i = 0; i < n-1; i++)

printf("%lld ", a[i]);

printf("%lld\n", a[i]);

}

return 0;

}