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1  #include <bits/stdc++.h>
2  #define pb push_back
3  #define sz(v) (v).size()
4  #define vi vector<int>
5  #define vs vector<string>
6  #define o_a \
7      ios_base::sync_with_stdio(0); \
8      cin.tie(0);
9  using namespace std;
10 typedef long long ll;
11 string sum_string(string num1, string num2);
12 string multiple_string(string num1, string num2);
13 string power_string(string str, int n);
14 int main()
15 {
16     o_a;
17     int n, d;
18     cin >> n >> d;
19     string ans = "";
20     for (int i = 1; i <= n; i++)
21     {
22         stringstream ss;
23         string num;
24         ss << i;
25         ss >> num;
26         string power = power_string(num, i);
27         ans = sum_string(ans, power);
28     }
29     ans = ans.substr(sz(ans) - d, d);
30     cout << ans;
31 }
32 string multiple_string(string num1, string num2)
33 {
34     int n = sz(num1);
35     int m = sz(num2);
36     string ans(n + m, '0');
37     for (int i = n - 1; i >= 0; i--)
38     {
39         for (int j = m - 1; j >= 0; j--)
40         {
41             int temp = (num1[i] - '0') * (num2[j] - '0') + (ans[i + j + 1] - '0');
42             ans[i + j + 1] = temp % 10 + '0';
43             ans[i + j] += temp / 10;
44         }
45     }
46     for (int i = 0; i < m + n; i++)
47     {
48         if (ans[i] != '0')
49             return ans.substr(i);
50     }
51     return "0";
52 }
53 string sum_string(string num1, string num2)
54 {
55     if (sz(num1) > sz(num2))
56         swap(num1, num2);
57     string str = "";
58     int n1 = sz(num1), n2 = sz(num2);
59     int diff = n2 - n1;
60     int carry = 0;
61     for (int i = n1 - 1; i >= 0; i--)
62     {
63         int sum = ((num1[i] - '0') + (num2[i + diff] - '0') + carry);
64         str.push_back(sum % 10 + '0');
65         carry = sum / 10;
66     }
67     for (int i = n2 - n1 - 1; i >= 0; i--)
68     {
69         int sum = ((num2[i] - '0') + carry);

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70     str.pb(sum % 10 + '0');
71     carry = sum / 10;
72 }
73 if (carry)
74     str.pb(carry + '0');
75 reverse(str.begin(), str.end());
76 return str;
77 }
78 string power_string(string num, int n)
79 {
80     string ans = "1";
81     for (int i = 0; i < n; i++)
82         ans = multiple_string(ans, num);
83     return ans;
84 }
```