

RBS:

It is a catalan number problem.

$$n=1 \quad dp[0] * dp[0] \quad \rightarrow 1$$

$$n=2 \quad dp[0] * dp[1] + dp[1] * dp[0] \quad \rightarrow 1 + 1 = 2$$

$$n=3 \quad dp[0]*dp[2] + dp[1]*dp[1] + dp[2]*dp[0] \quad \rightarrow 2 + 1 + 2 = 5$$

$$n=4 \quad dp[0]*dp[3] + dp[1]*dp[2] + dp[2]*dp[1] + dp[3]*dp[0] \quad \rightarrow 5 + 2 + 2 + 5 = 14$$

$$n=5 \quad dp[0]*dp[4] + dp[1]*dp[3] + dp[2]*dp[2] + dp[3]*dp[1] + dp[4]*dp[0] \quad \rightarrow 14 + 5 + 4 + 5 + 14 = 42$$

Grid Path:

i\j	1	2	3	4	5
1	1	1	1	1	1
2	1	2	3	4	5
3	1	3	6	10	15
4	1	4	10	20	35
5	1	5	15	35	70