**RBS:**

It is a catalan number problem.

n=1 dp[0] \* dp[0] -> 1

n=2 dp[0] \* dp[1] + dp[1] \* dp[0] -> 1 + 1 = 2

n=3 dp[0]\*dp[2] + dp[1]\*dp[1] + dp[2]\*dp[0] -> 2 + 1 + 2 = 5

n=4 dp[0]\*dp[3] + dp[1]\*dp[2] + dp[2]\*dp[1] + dp[3]\*dp[0] ->5 + 2 + 2 + 5 = 14

n=5 dp[0]\*dp[4] + dp[1]\*dp[3] + dp[2]\*dp[2] + dp[3]\*dp[1] + dp[4]\*dp[0] -> 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** |