### 9. Hexgrid Path Generation

**PROBLEM:** Consider the grid of hexagons shown at the right. The grid extends upward infinitely and to the right for 26 columns.

One can move from cell to cell across the borders of the cells. For example, one of the paths of length 5 from B2 to D1 is B2-C2-D3-D2-E1-D1.

In this program, you will be given a starting and ending location. You need to report the number of different paths of a specified length between the two locations. No path can use the same cell more than once.

For example, there are 4 paths of length 3 starting at D5 and ending at E4. The paths are: D5-D6-E5-E4, D5-E5-F5-E4, D5-D4-E3-E4, D5-C4-D4-E4.

**INPUT:** There will be 10 lines of input. Each line will contain two strings (starting and ending cells), and the length of the path. The strings will be fewer than 5 characters long, and the path length will not exceed 16.

**OUTPUT:** For each line of input, print the number of different paths between the starting and ending cell of the specified length. A path may not go below Row 1, to the left of Column A, or to the right of Column Z, and may not contain any duplicate cells.
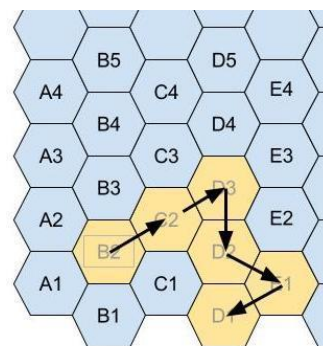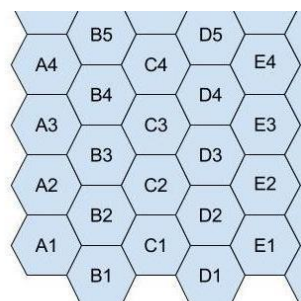
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**SAMPLE INPUT**

D5 E4 3
E4 D5 3
D5 E4 4
D5 E4 5
D5 E3 6
D1 B2 2
B2 D3 3
E1 D3 2
F6 H5 3
A1 K5 12

**SAMPLE OUTPUT**

1. 4
2. 4
3. 10
4. 30
5. 140
6. 1
7. 6
8. 2
9. 6
10. 8867

# TEST DATA

| TEST INPUT | TEST OUTPUT |
|---|---|
| G8 F7 3 | 1.  6 |
| G8 F7 4 | 2.  16 |
| G8 F7 6 | 3.  140 |
| G8 F7 7 | 4.  464 |
| A1 E5 6 | 5.  15 |
| A1 E5 9 | 6.  4347 |
| Z9 Z8 7 | 7.  118 |
| Z48 X51 8 | 8.  1274 |
| Z48 X51 9 | 9.  4083 |
| A1 A9 10 | 10.  492 |