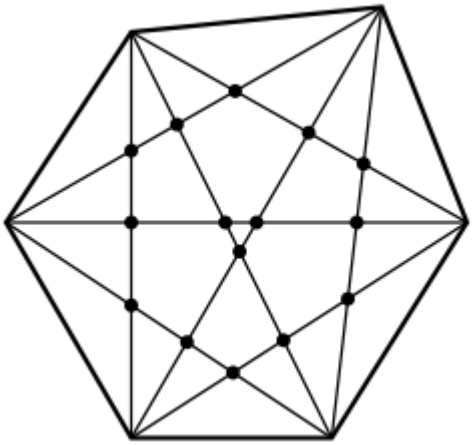
Consider a convex polygon with N vertices, with the additional property that no three diagonals intersect in a single point. Find the number of intersections between pairs of diagonals in such a polygon.

The figure below shows one such polygon with 6 vertices.



**Note**: a polygon is convex if all of its interior angles are less than 180 degrees.

## Input

The first and only line of input contains a single integer N, $3 \leq N \leq 100$.

## Output

Output the number of intersections on a single line.

## Sample test data

| **input** | **input** | **input** |
|---|---|---|
| 3 | 4 | 6 |
| **output** | **output** | **output** |
| 0 | 1 | 15 |