Hankel Matrix

Given an n-dimensional vector $x = (x_1, x_2, \ldots, x_n)$, create the matrix A that has x along the anti-diagonal. For example, for $n = 3$:

$$A = \begin{bmatrix} 0 & 0 & x_3 \\ 0 & x_2 & 0 \\ x_1 & 0 & 0 \end{bmatrix}$$

Input Format

An n-dimensional numpy array x

Output Format

An $n \times n$ numpy array representing the matrix A as described above.

Constraints

- $3 \leq n \leq 3000$

Sample Input

```
x = [1, 2, 3]
```

Sample Output

```
[[0. 0. 3.]
 [0. 2. 0.]
 [1. 0. 0.]]
```

Implementation

Goal: Fill in the following function:

```
def hankel_matrix(x):
    ...
    return ... # Return the resulting matrix
exec("\n".join(iter(input, "#Exit"))) # Don't remove this line
```