Q Given an array, return the answer array, such that ans[i], is equal to the product of all the elements of arr except arr[i].

Example: arr → [1, 2, 3, 4]

output → [24, 12, 8, 6]

2×3×4 = 24, 1×3×4 = 12, 1×2×4 = 8, 1×2×3 = 6

* TC → O(n)
* X division operation

[4 5 1 8 2] ans

[4 5 1 8 2] 80

[4 5 1 8 2] 4*16 → 64

[4 5 1 8 2] 20 * 16 → 320

[4 5 1 8 2] 40

[4 5 1 8 2] 160

[4 5 1 8 2]

O(n)

LS → | 1 | 4 | 20 | 20 | 160 |

RS → | 80 | 16 | 16 | 2 | 1 |

ans → | 80 | 64 | 320 | 40 | 160 |

LS[i] * RS[i]

Q Given n coins, tossed parallely. Find all the combinations of outputs (using recursion).

For n = 2

[H, T]
[T, H]
[H, H]
[T, T]

Recursion

1. Self work
2. Recursive call (n-1)
3. Base case → n = 1 [H, T]

n = 3

c1	c2	c3
H	H	H
H	H	T
H	T	H
H	T	T
T	H	H
T	H	T
T	T	H
T	T	T

n = 2

H: HH, HT, TH, TT
T: HH, HT, TH, TT

n → Bigger problem
n-1 → smaller problem

Q Mazepath (Recursion) → (srcr, srcc)

(0,0) (2,2)

VVHH
HHVV
HVHV
VHVH
VHHV
HVVH

possible moves → V, H

(0,0) → (2,2)
(1,0) → (2,2)

VHHV
VHVH
VVHH

(0,0) (src) (2,2) (dest)

Bigger problem
(0,0) → (2,2)

Smaller problem
(1,0) → (2,2)
(0,1) → (2,2)

HHVV
HVHV
HVVH

→ 2 recursive calls

(2,2) → (2,2)
src == dest

Base cases → Negative base case
positive base case
src == dest