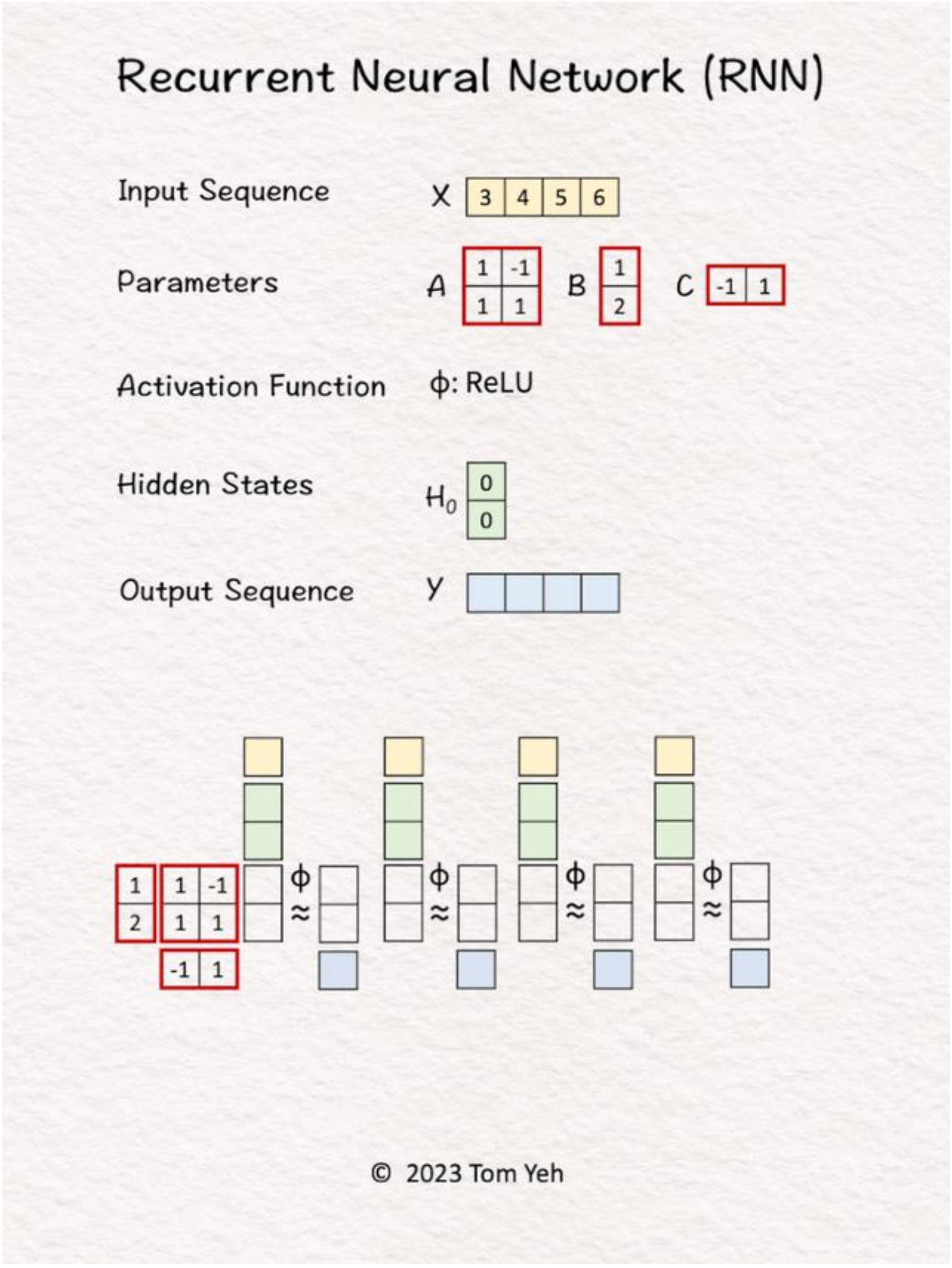
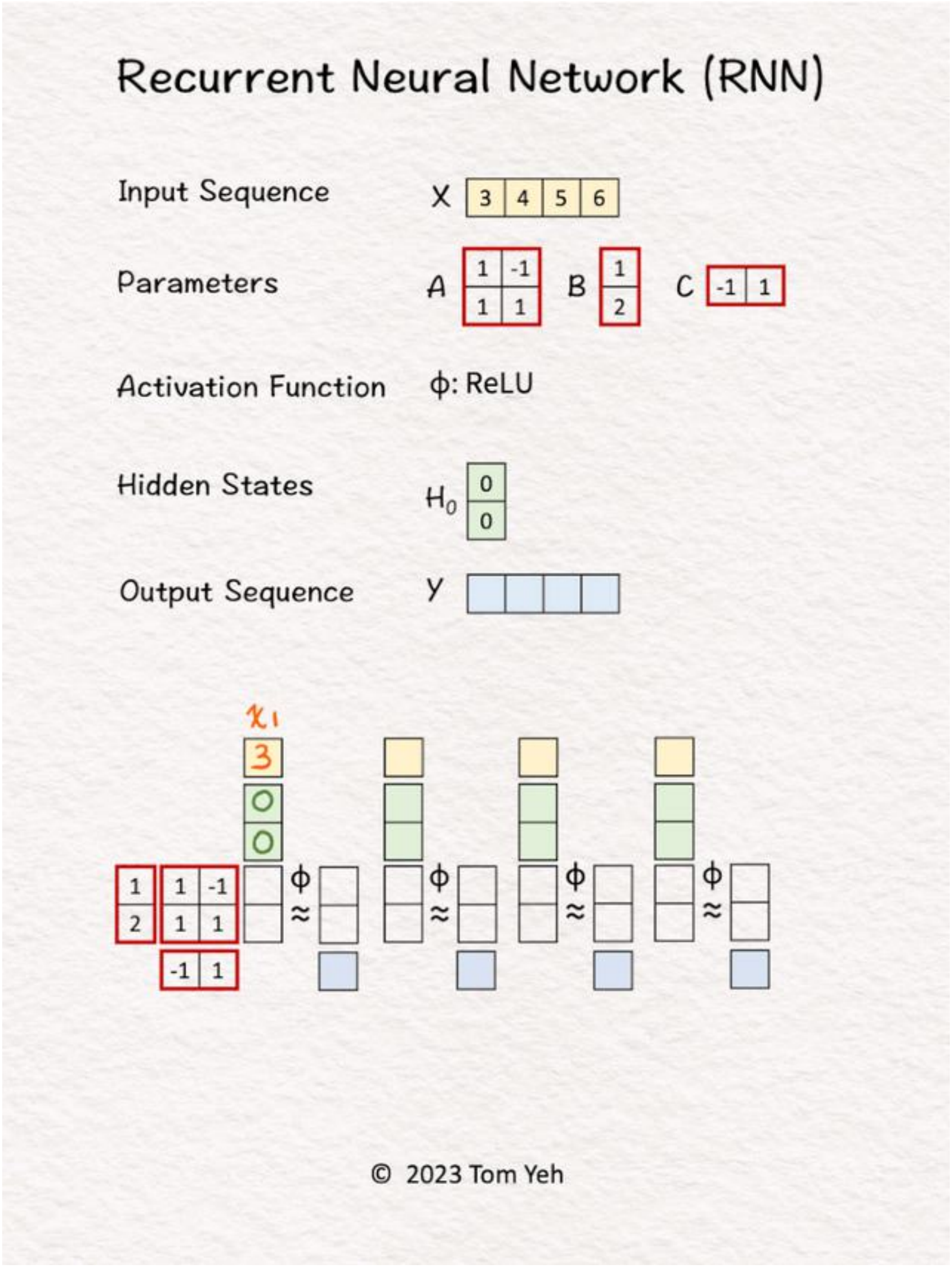


[1] 隐藏状态初始化为 [0, 0]。

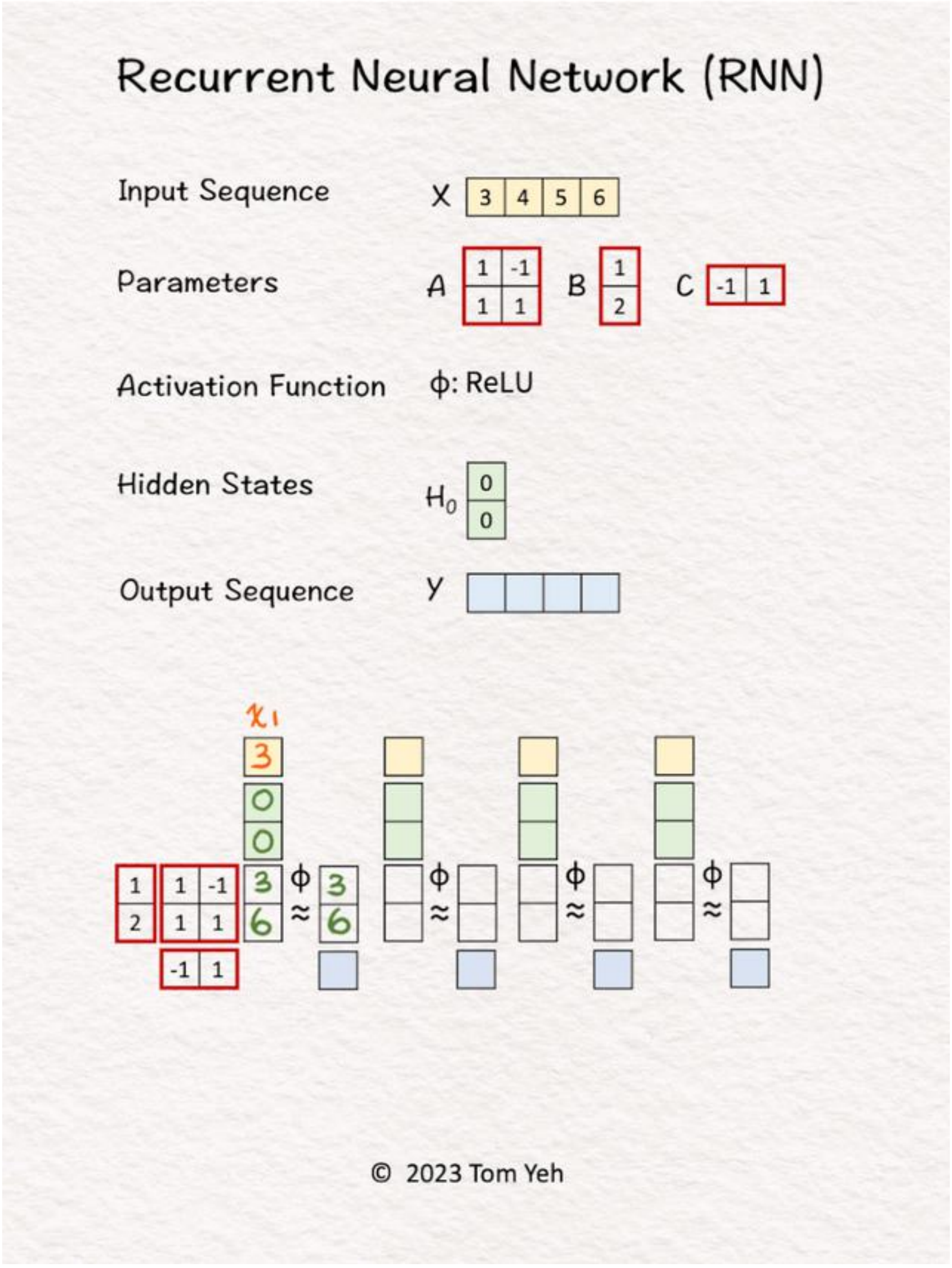
[1] Hidden state are initialized to [0, 0].



[2] 利用权重矩阵A和B将第一个输入x1和

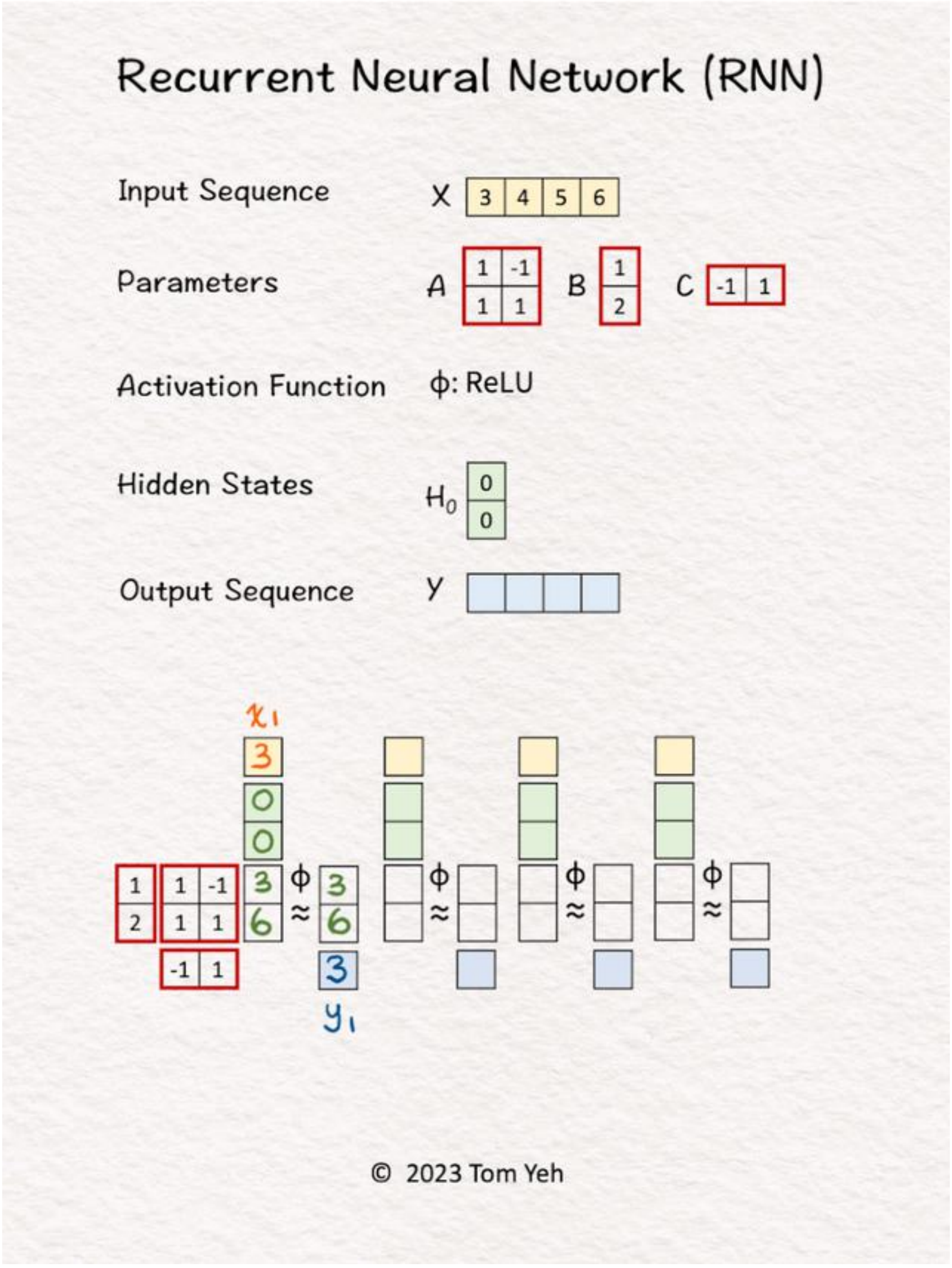
隐藏状态[0,
0]线性组合,然后通过ReLU非线性激活函数计算出新的隐藏状态
-> [3, 6]。

[2] The first input x1 and hidden states [0, 0] are linearly combined using weights A and B, followed by a non-linear activation function ReLu, to calculate the new hidden states -> [3, 6].



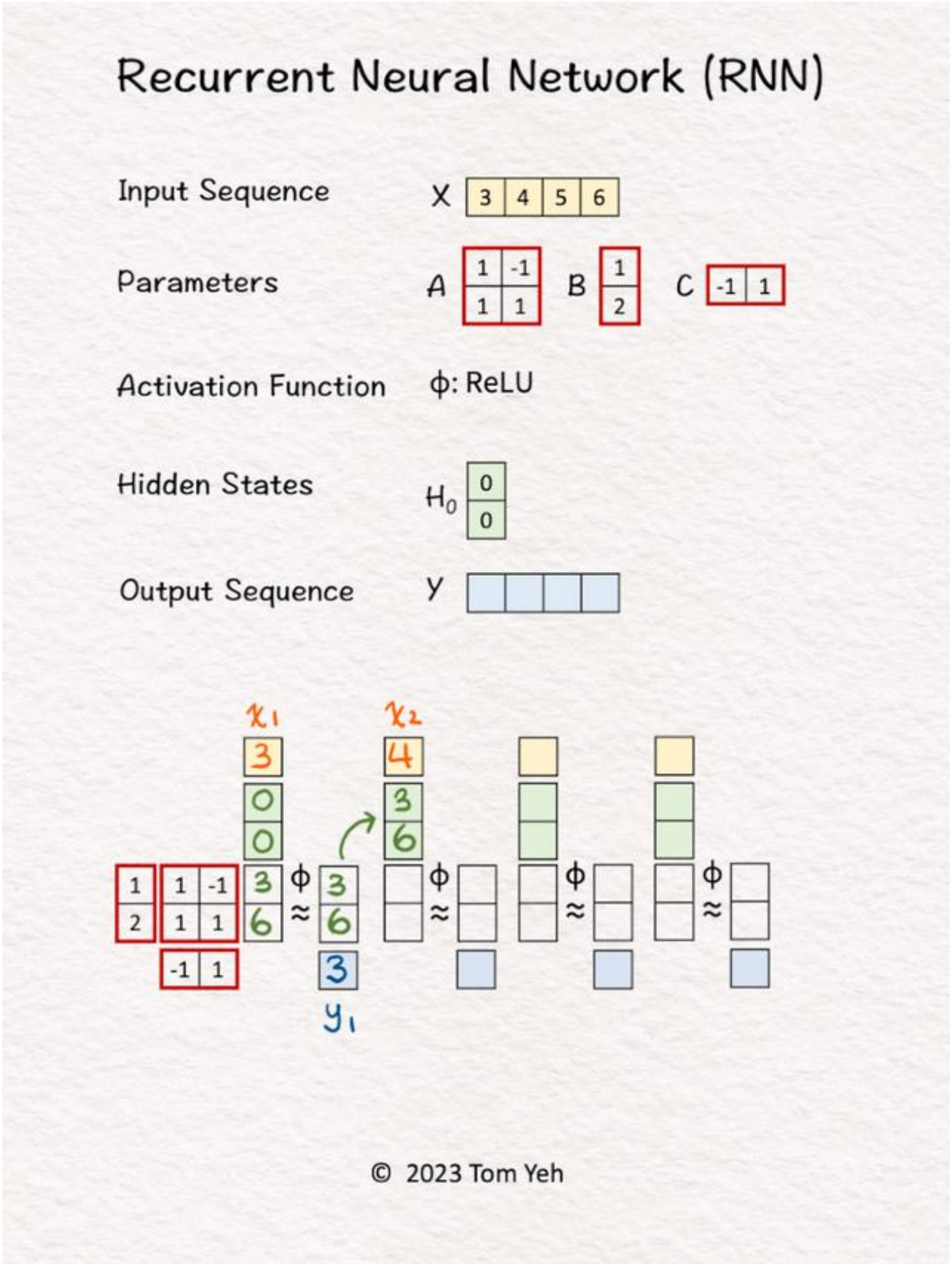
[3] 利用权重矩阵将隐藏状态[3, 6]线性组合得到第一个输出y1 -> [3]。

[3] The hidden states [3, 6] are linearly combined using weights C to obtain the first output y1 -> [3].



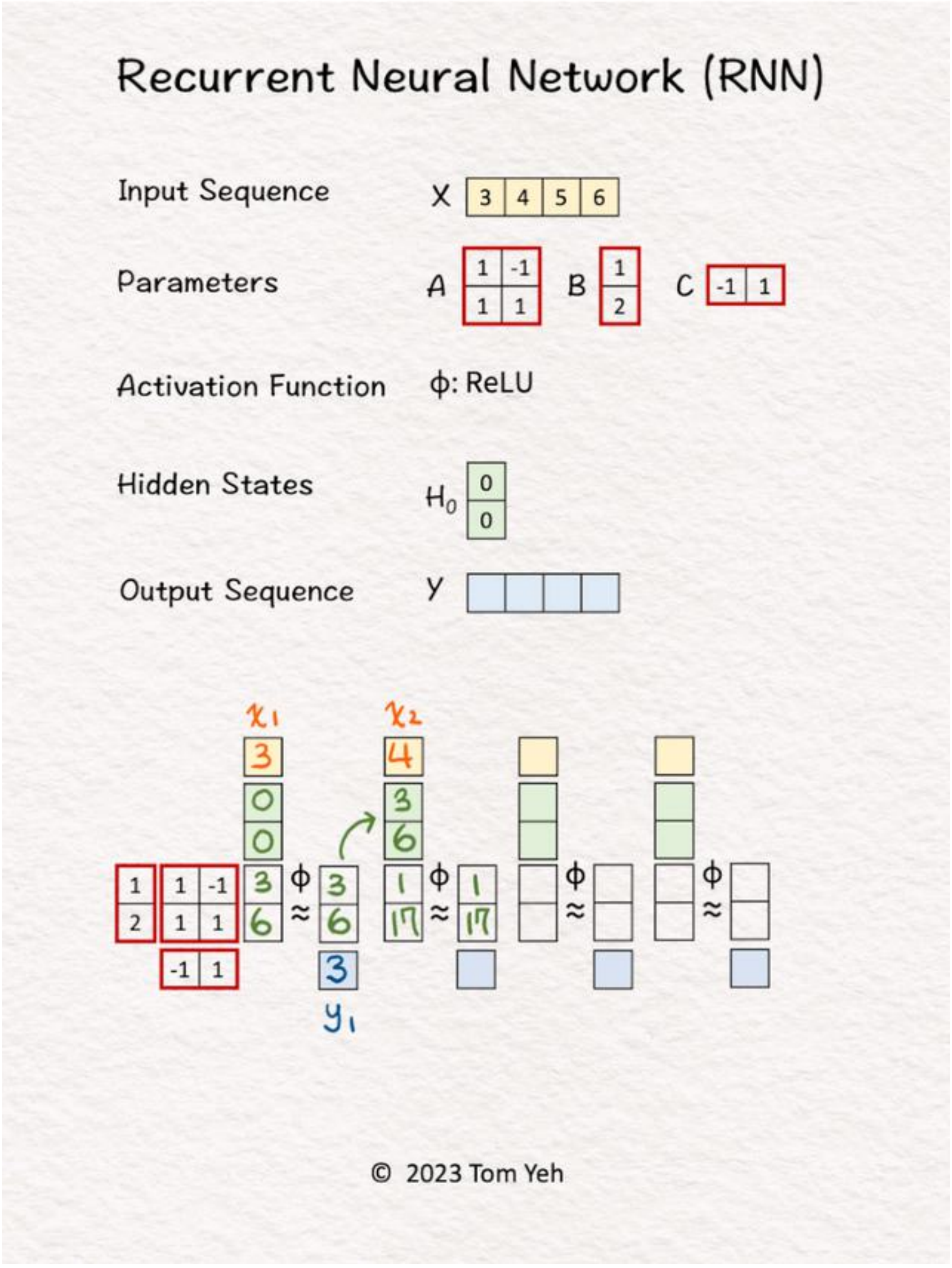
[3] 利用权重矩阵将隐藏状态[3, 6]线性组合得到第一个输出y1 -> [3]。

[3] The hidden states [3, 6] are linearly combined using weights C to obtain the first output y1 -> [3].

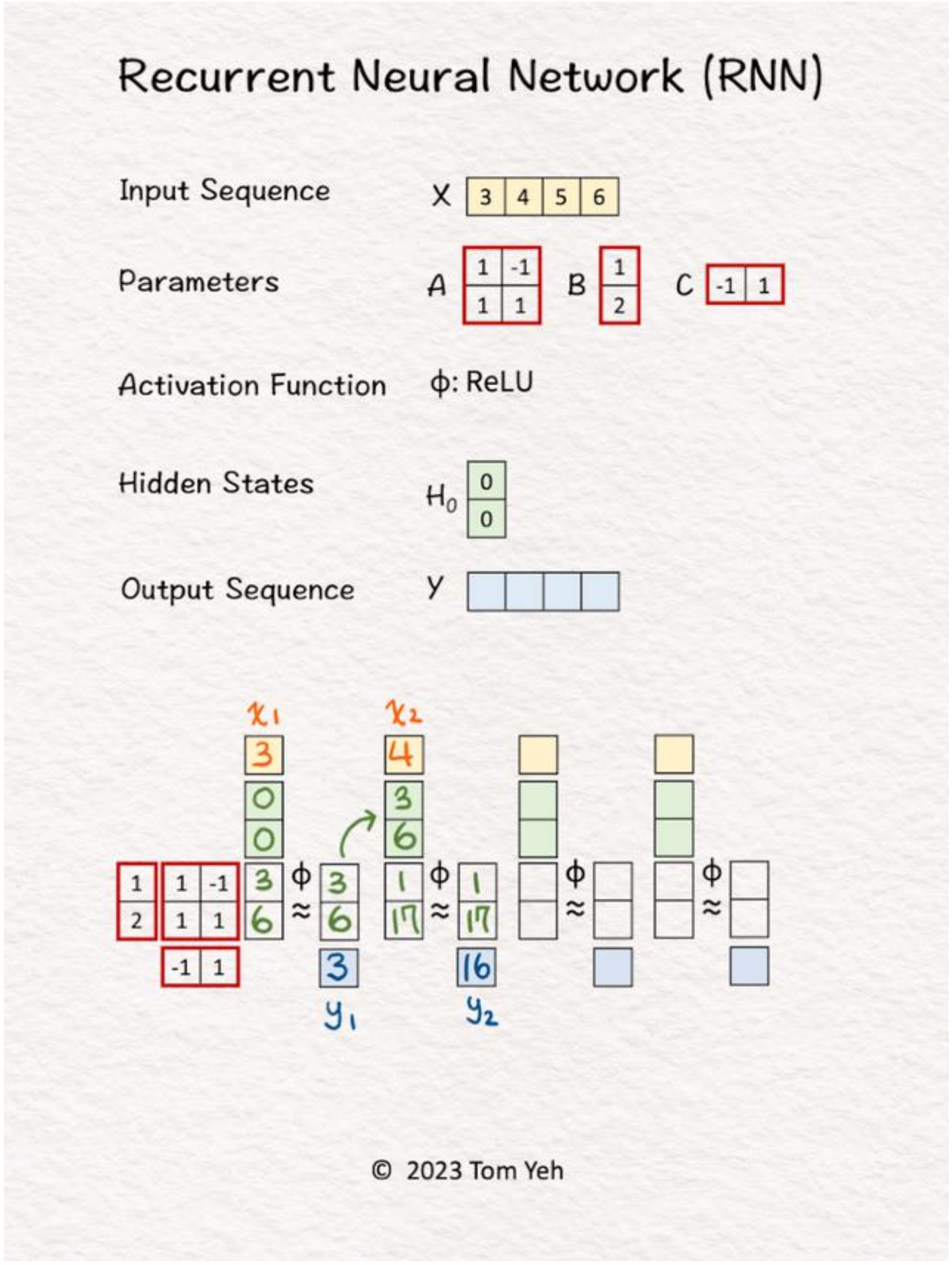


[4] 将输入x2和新的隐藏状态[3, 6]线性组合并通过ReLU激活,得到新的隐藏状态 -> [1, 17]。

[4] Input x2 and the new hidden states [3, 6] are linearly combined and passed through the ReLu activation to get the new hidden states -> [1, 17].



[4] 将输入x2和新的隐藏状态[3, 6]线性组合并通过ReLU激活,得到新的隐藏状态 -> [1, 17]。



[5] 利用权重矩阵将隐藏状态[1，17]线性组合得到第二个输出y2 -> [16]。

[5] The hidden states [1, 17] are linearly combined using weights C to obtain the second output y2 -> [16].

Recurrent Neural Network (RNN)

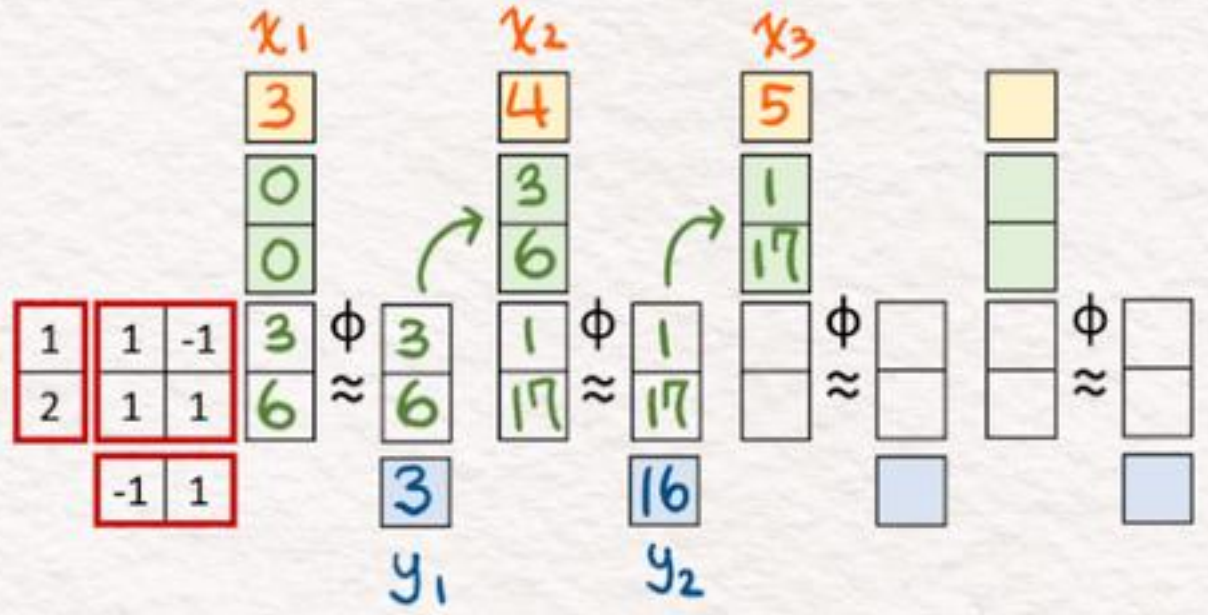
Input Sequence X [3 | 4 | 5 | 6]

Parameters A [[1, -1], [1, 1]] B [[1], [2]] C [-1, 1]

Activation Function ϕ: ReLU

Hidden States H_0 [0, 0]

Output Sequence Y [| | |]



Recurrent Neural Network (RNN)

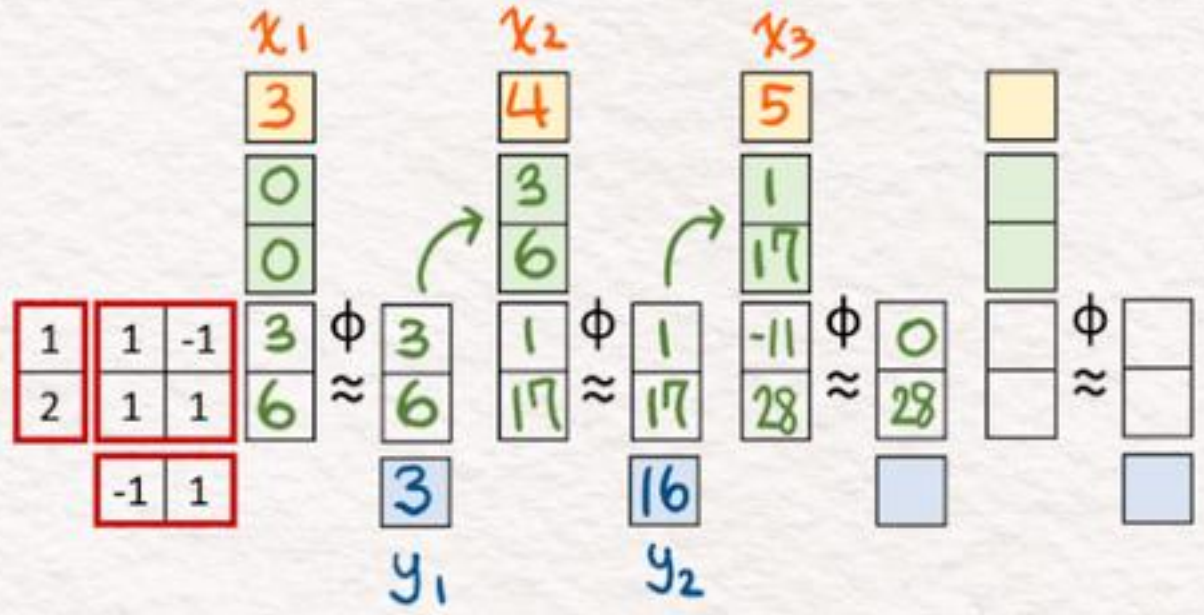
Input Sequence X | 3 | 4 | 5 | 6 |

Parameters A | 1 | -1 | / | 1 | 1 | B | 1 | / | 2 | C | -1 | 1 |

Activation Function ϕ: ReLU

Hidden States H_0 | 0 | / | 0 |

Output Sequence Y | | | | |



Recurrent Neural Network (RNN)

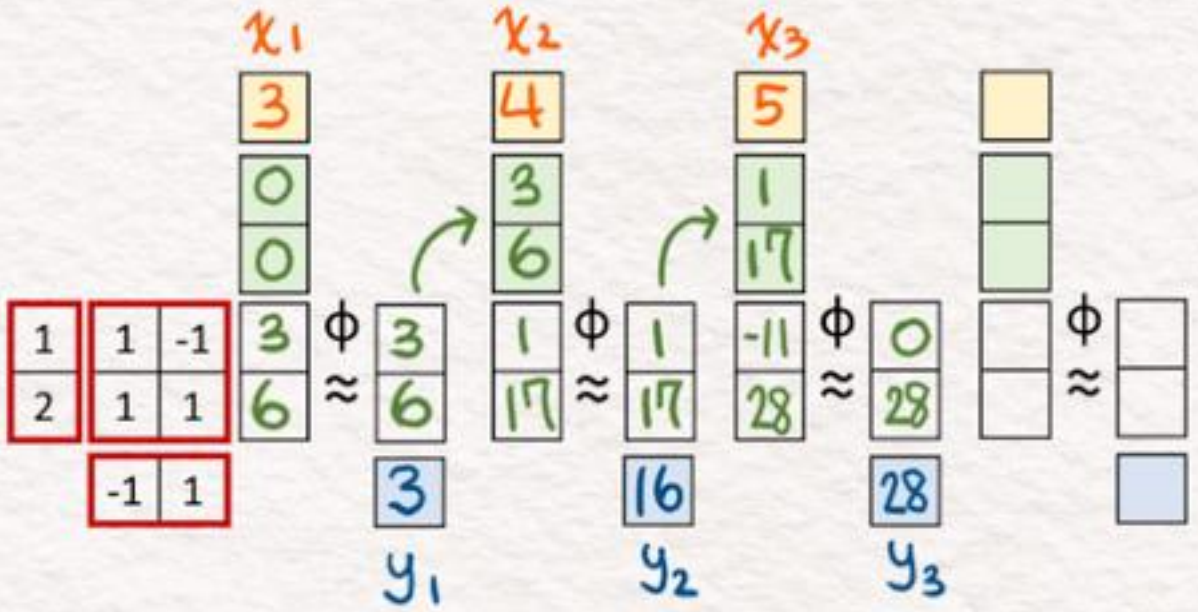
Input Sequence X [3 | 4 | 5 | 6]

Parameters A [[1, -1], [1, 1]] B [[1], [2]] C [-1, 1]

Activation Function ϕ: ReLU

Hidden States H_0 [0, 0]

Output Sequence Y [| | |]



Recurrent Neural Network (RNN)

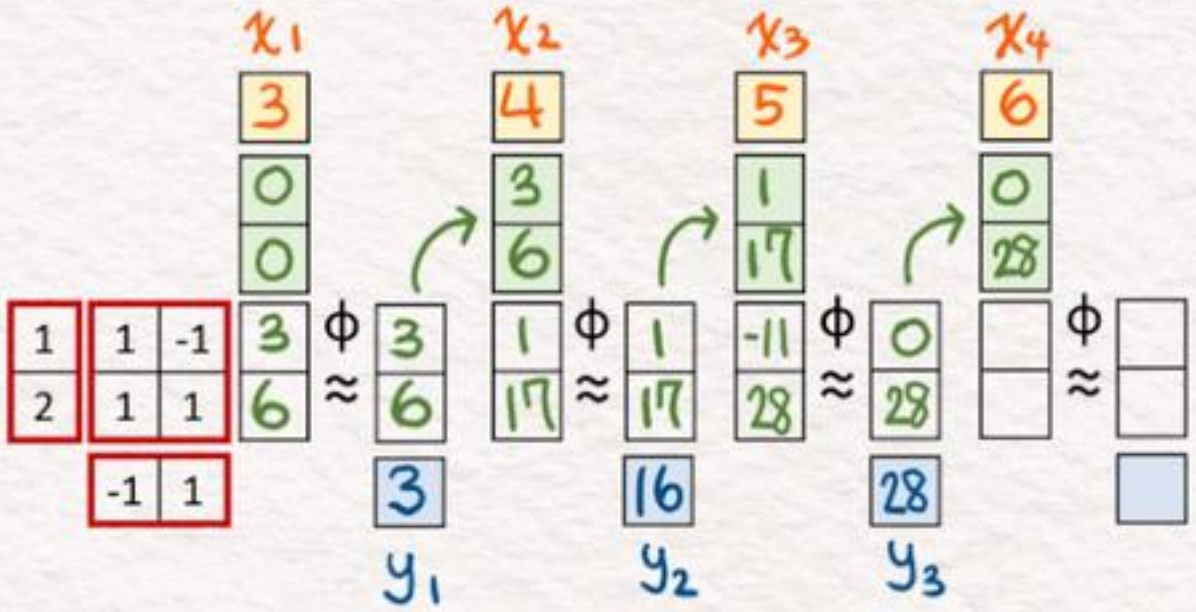
Input Sequence X | 3 | 4 | 5 | 6 |

Parameters A | 1 | -1 | / | 1 | 1 | B | 1 | / | 2 | C | -1 | 1 |

Activation Function ϕ: ReLU

Hidden States H_0 | 0 | / | 0 |

Output Sequence Y | | | | |



Recurrent Neural Network (RNN)

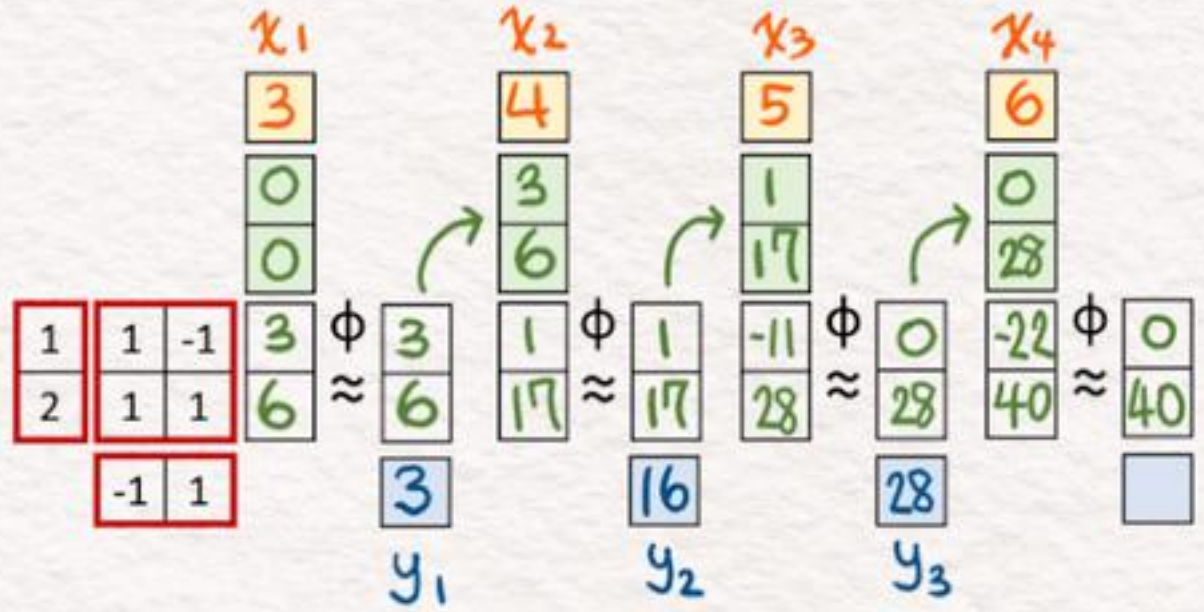
Input Sequence X = [3, 4, 5, 6]

Parameters A = [[1, -1], [1, 1]] B = [[1], [2]] C = [-1, 1]

Activation Function ϕ: ReLU

Hidden States H_0 = [0, 0]

Output Sequence Y = [, , ,]



Recurrent Neural Network (RNN)

Input Sequence X = [3, 4, 5, 6]

Parameters A = [[1, -1], [1, 1]] B = [[1], [2]] C = [-1, 1]

Activation Function ϕ: ReLU

Hidden States H_0 = [0, 0]

Output Sequence Y = [, , ,]