http://algs4.cs.princeton.edu

1.3 DIJKSTRA'S 2-STACK

- *With correction*

Dijkstra's two-stack algorithm

Value: push onto the value stack.

Operator: push onto the operator stack.

Left parenthesis: ignore.

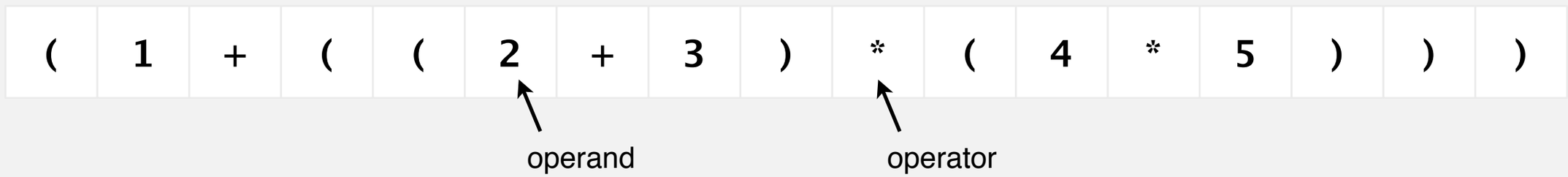
Right parenthesis: pop operator and two values; push the result of applying that operator to those values onto the value stack.

value stack

operator stack

infix expression

(fully parenthesized)



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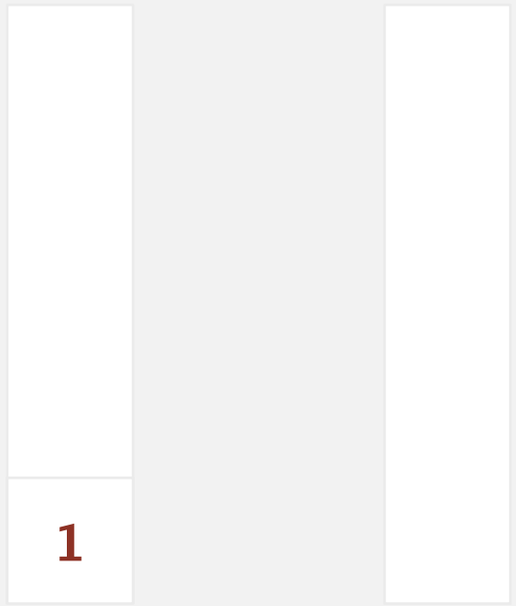

(	1	+	(	(	2	+	3	)	*	(	4	*	5	)	)	)

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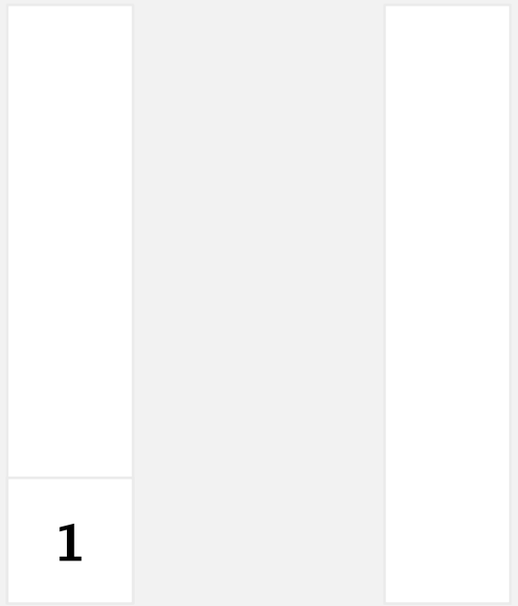

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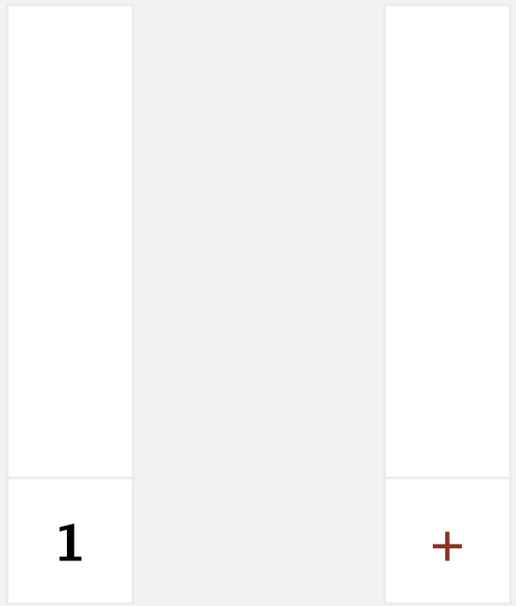

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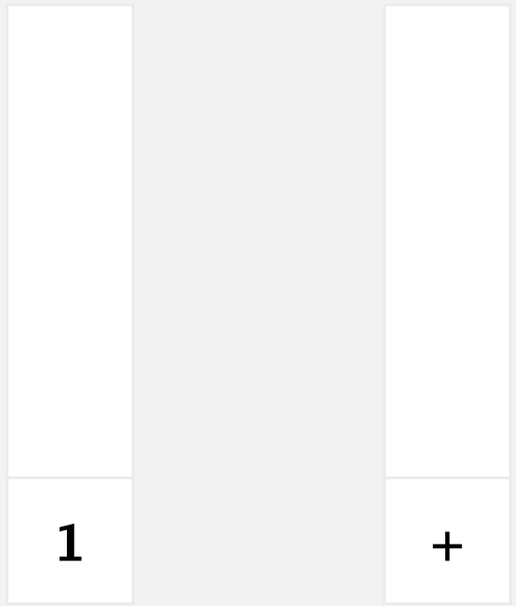

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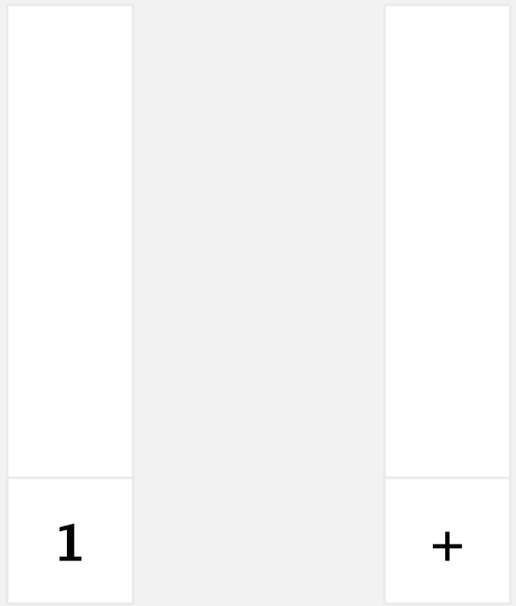

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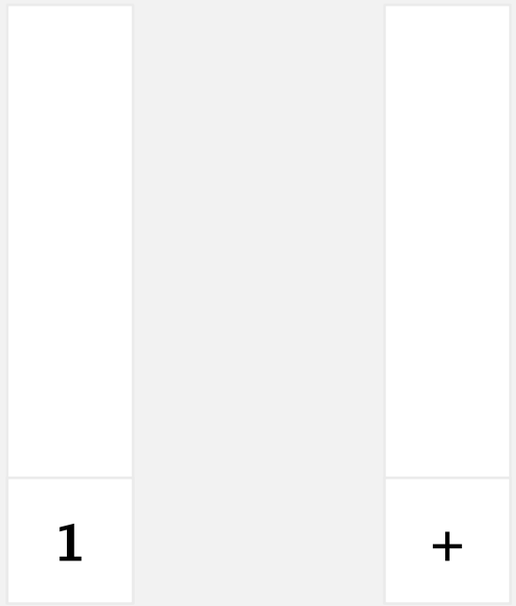

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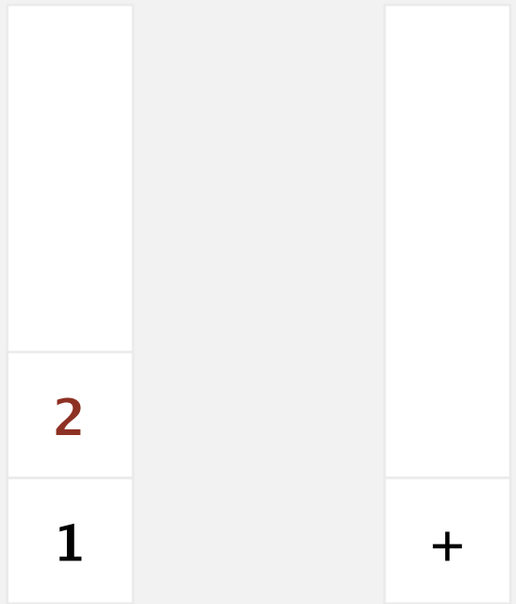

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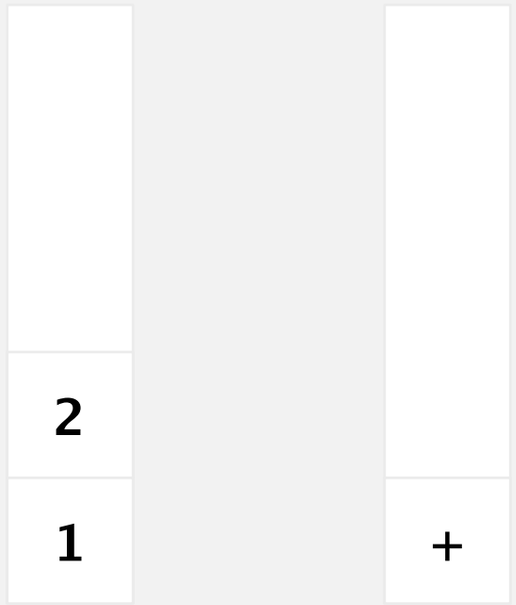

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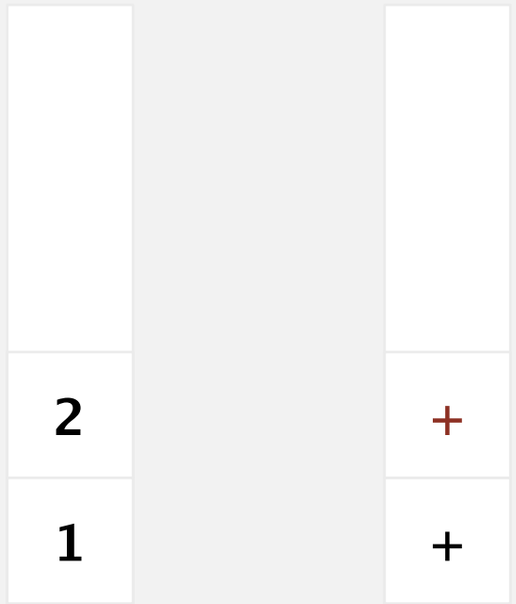

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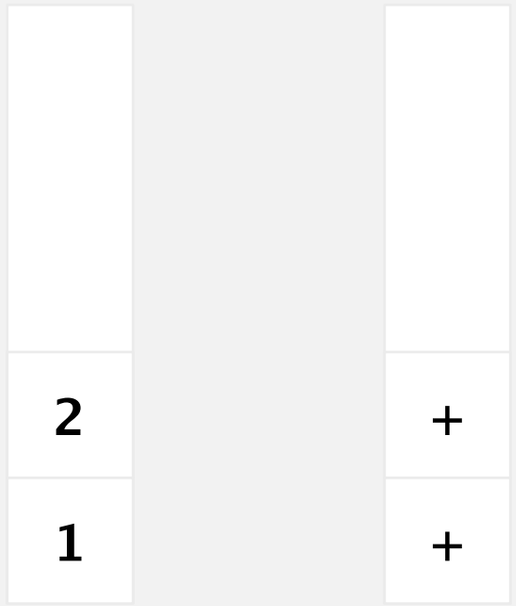

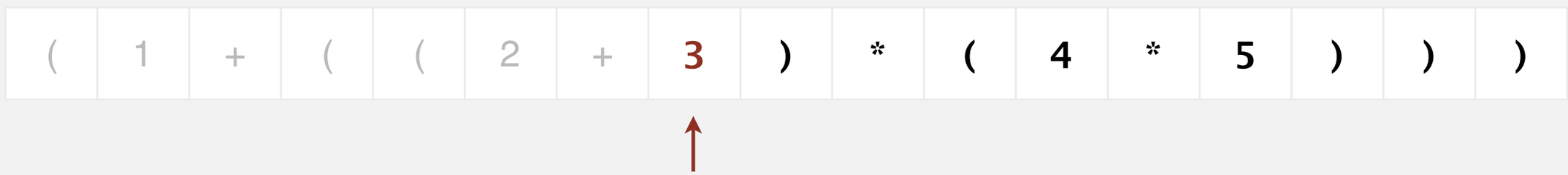

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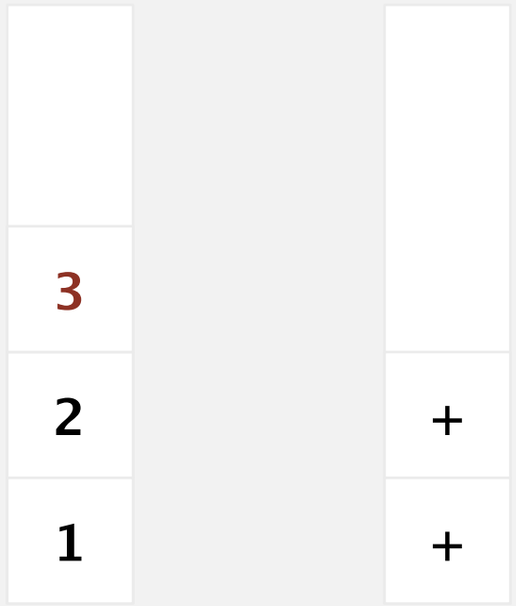

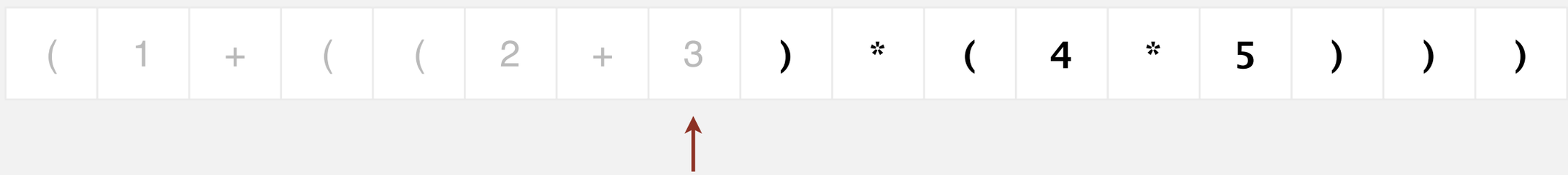

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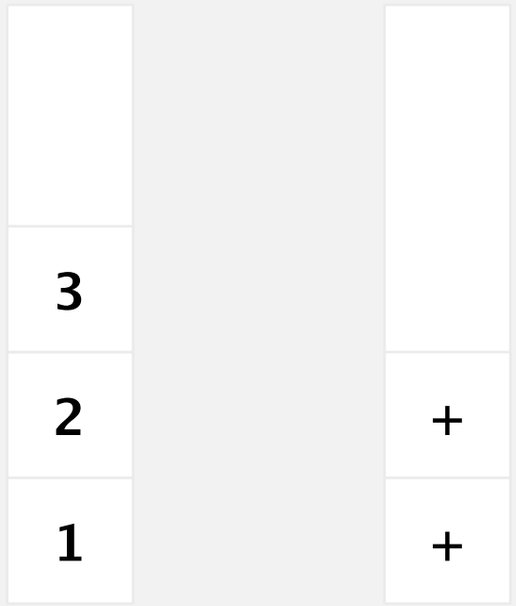

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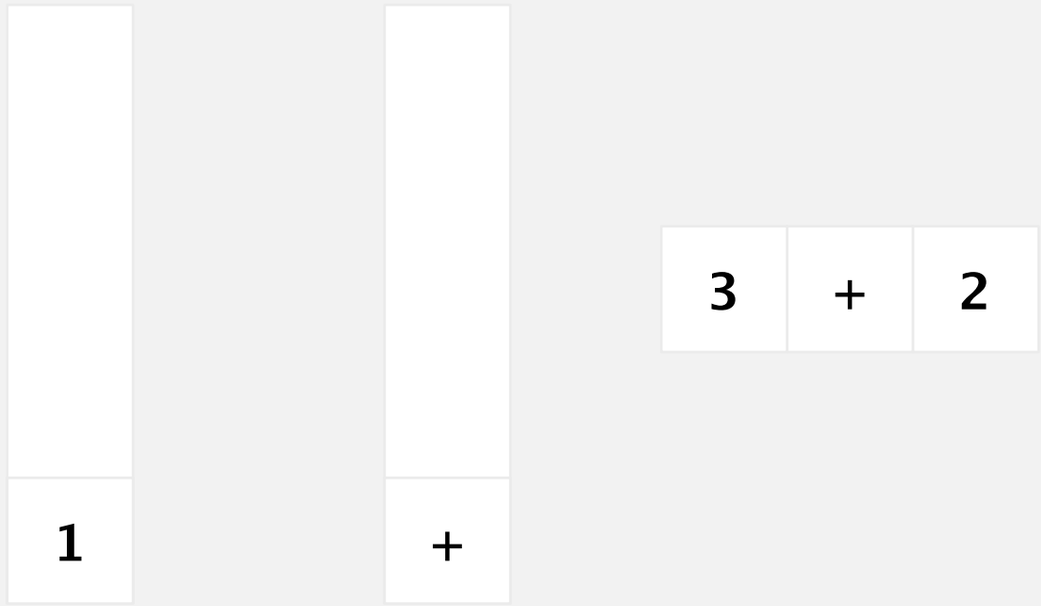

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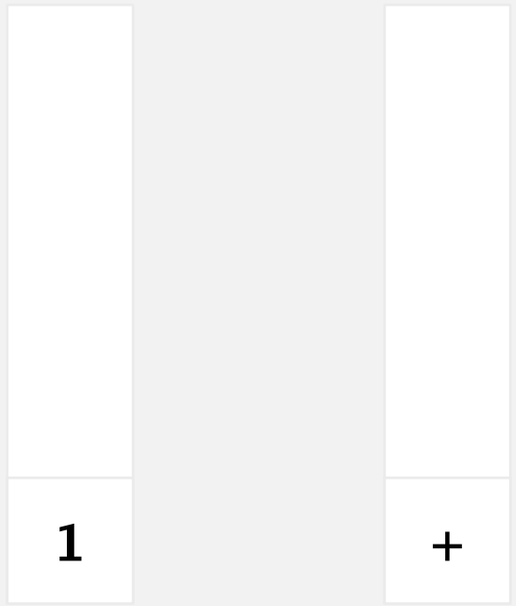

3	+	2	=	5

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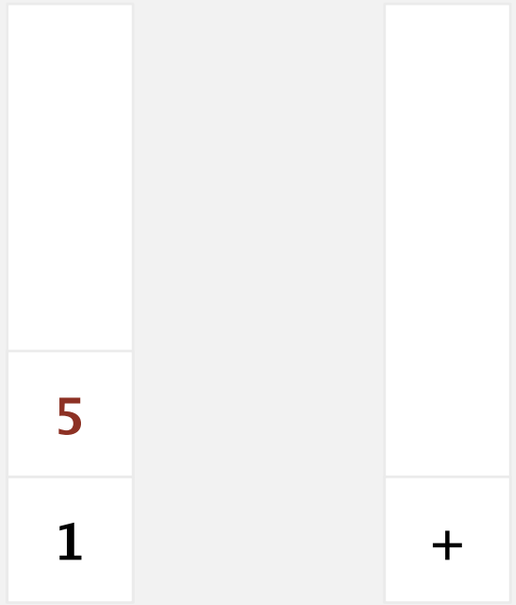

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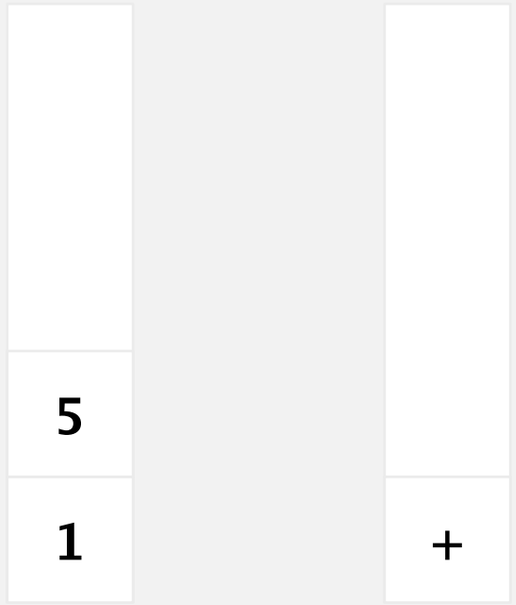

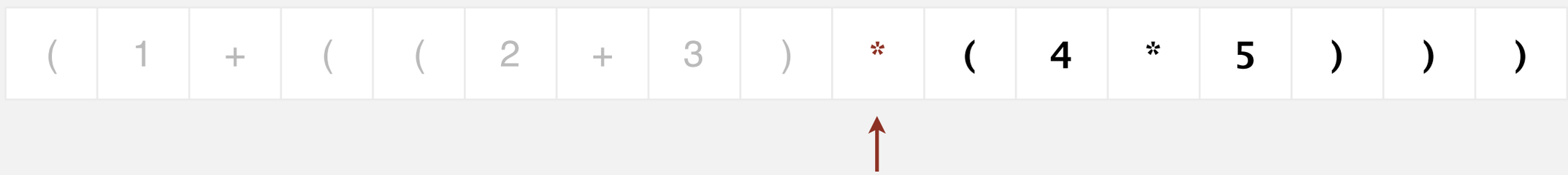

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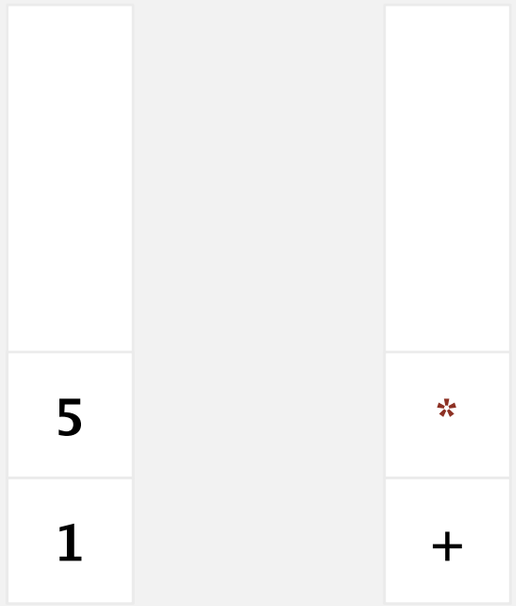

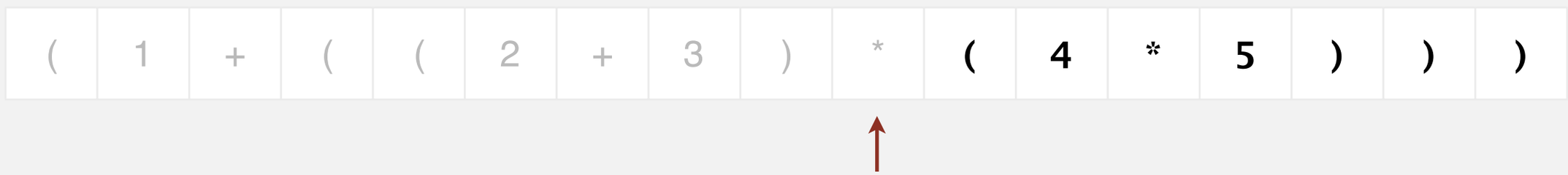

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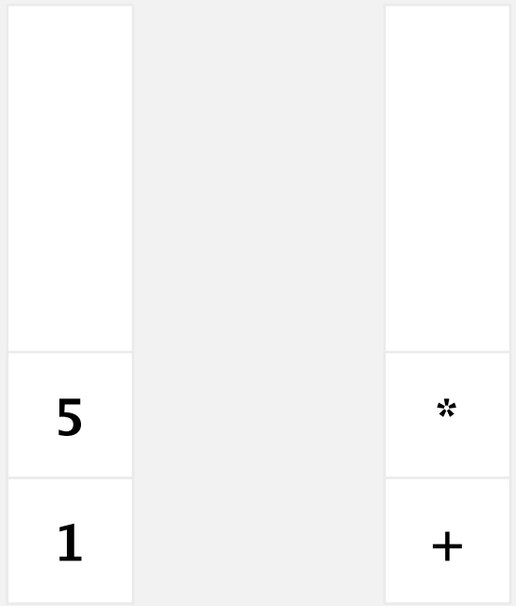

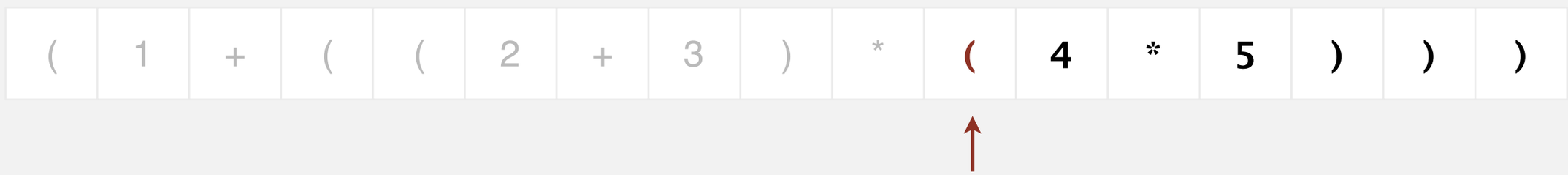

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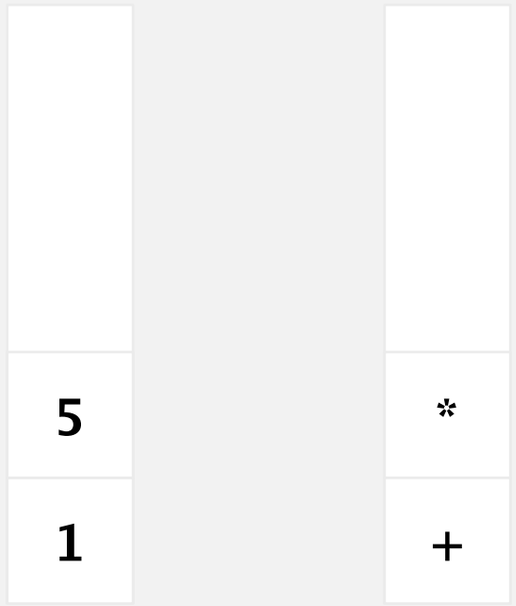

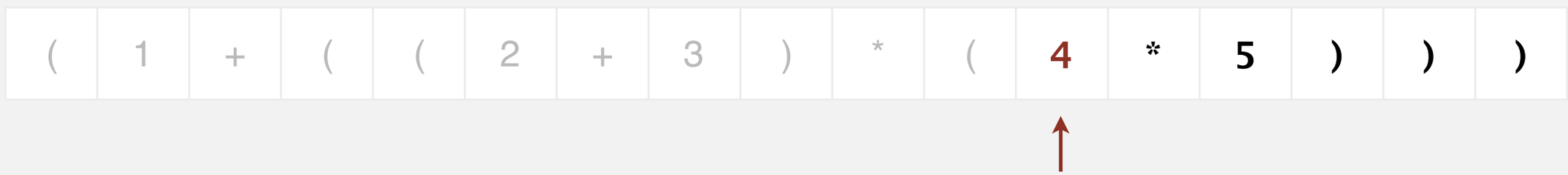

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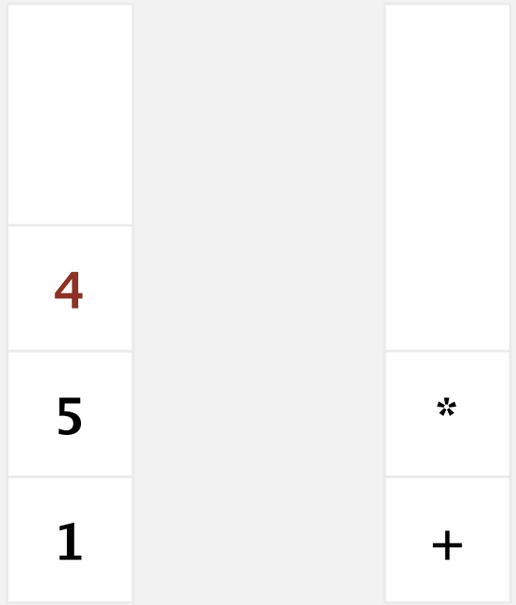

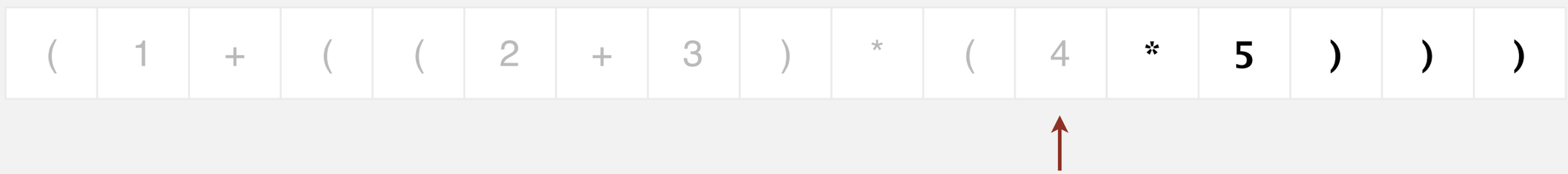

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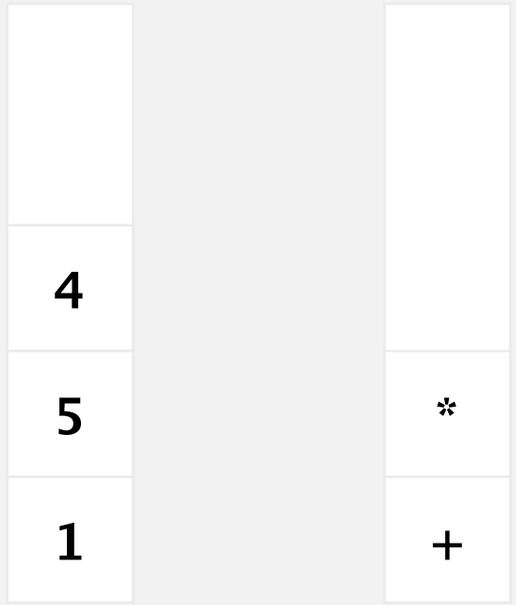

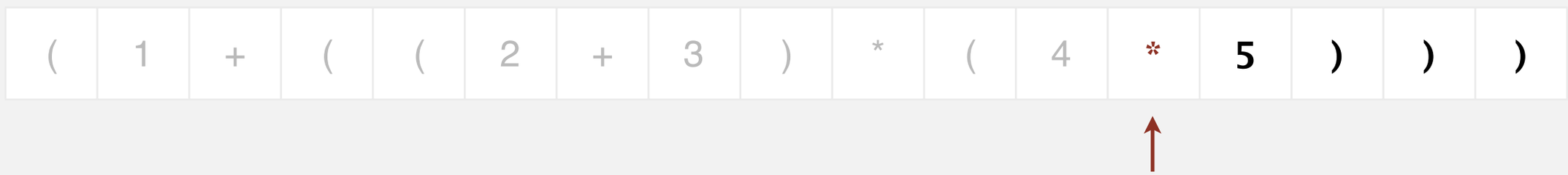

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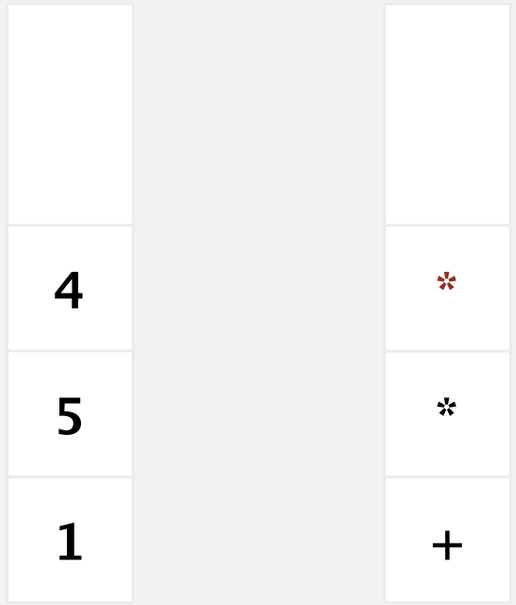

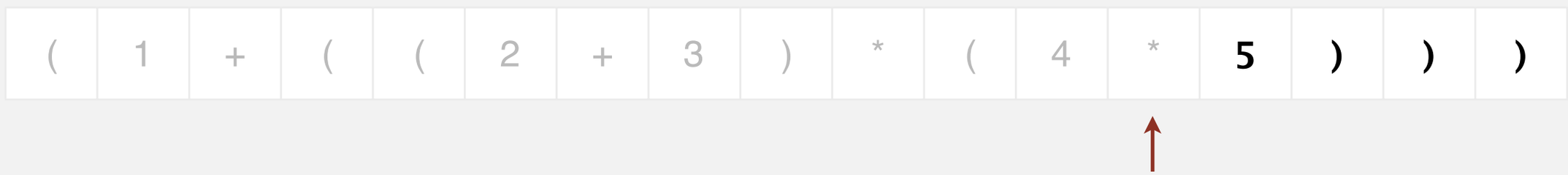

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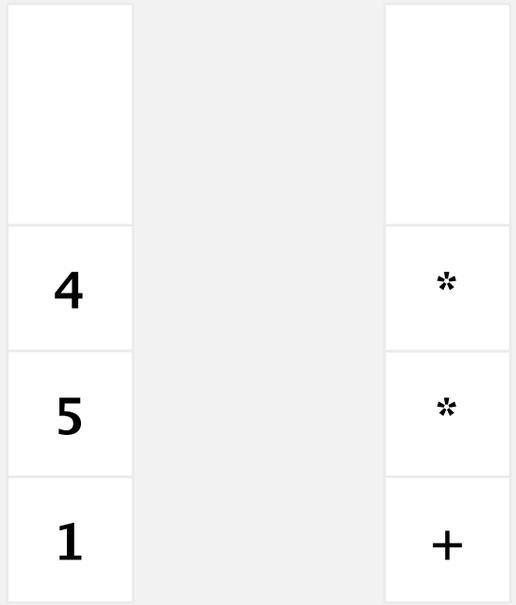

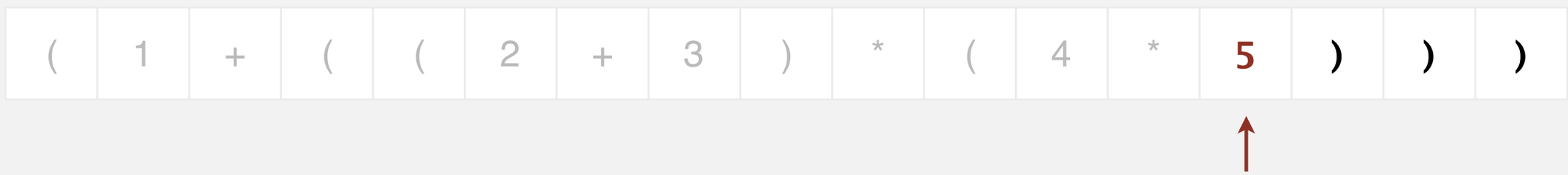

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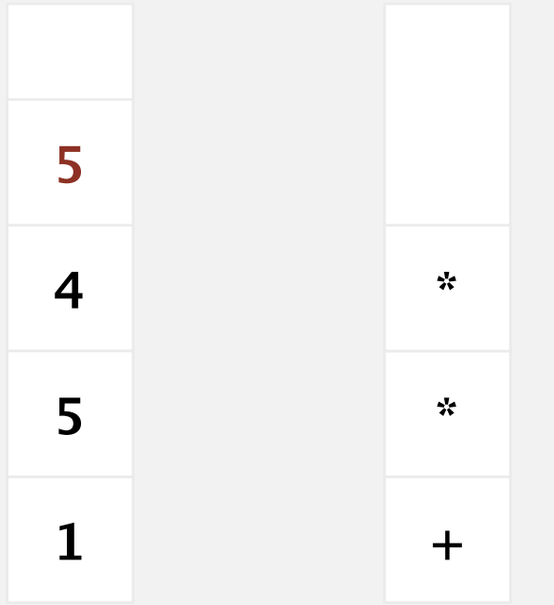

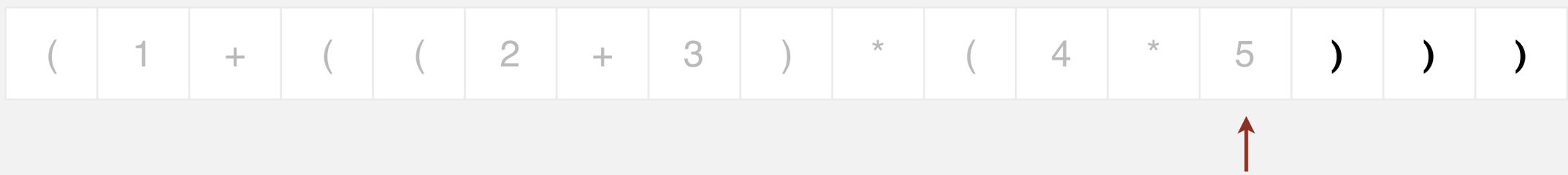

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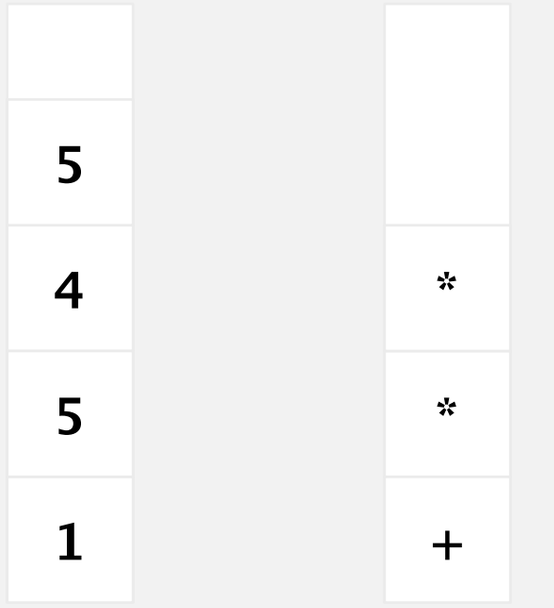

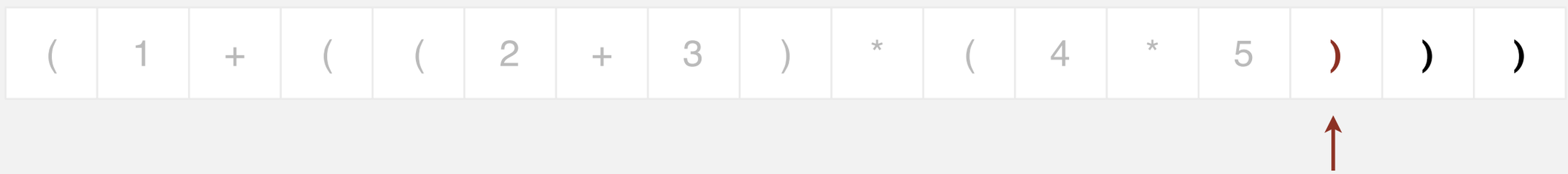

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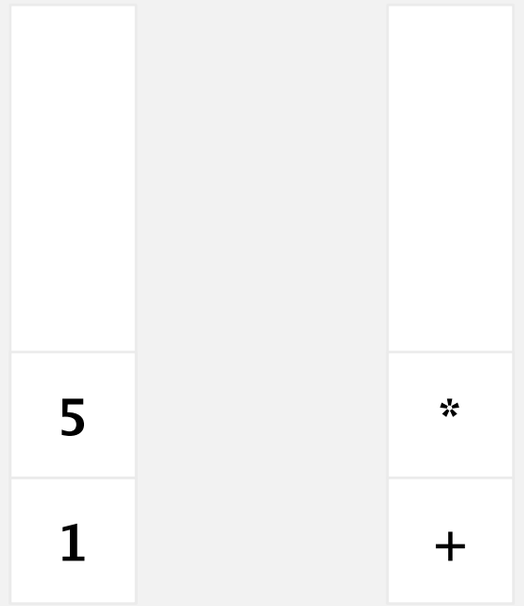

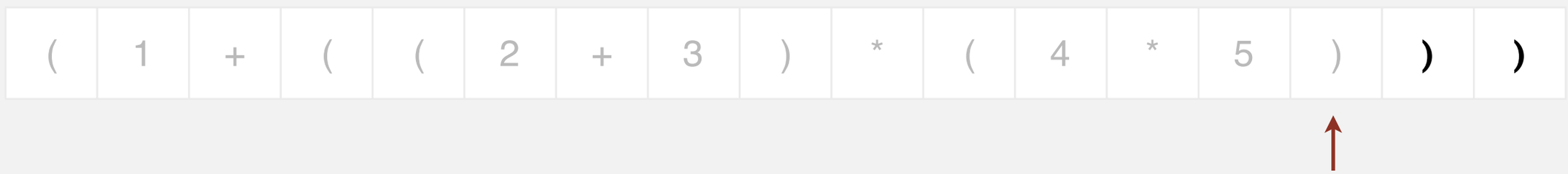

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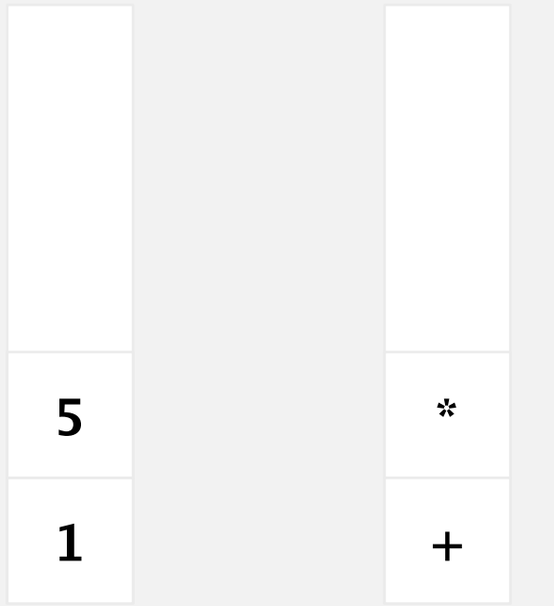

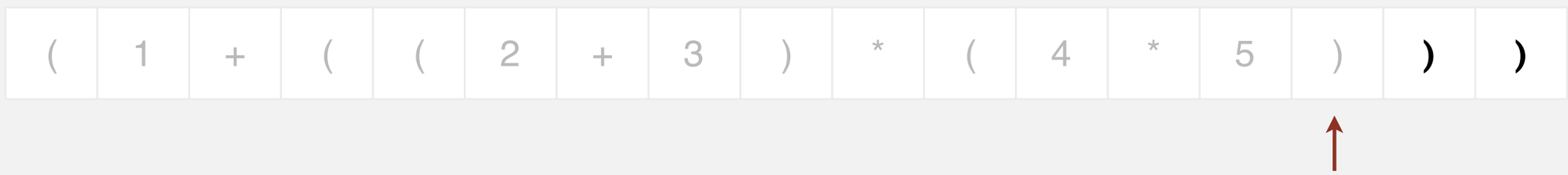

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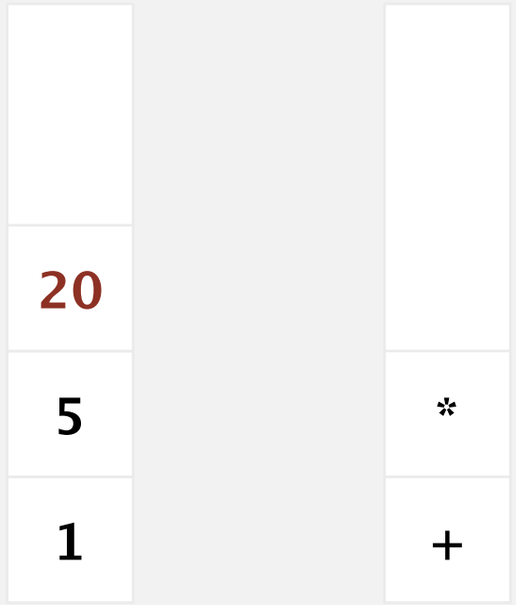

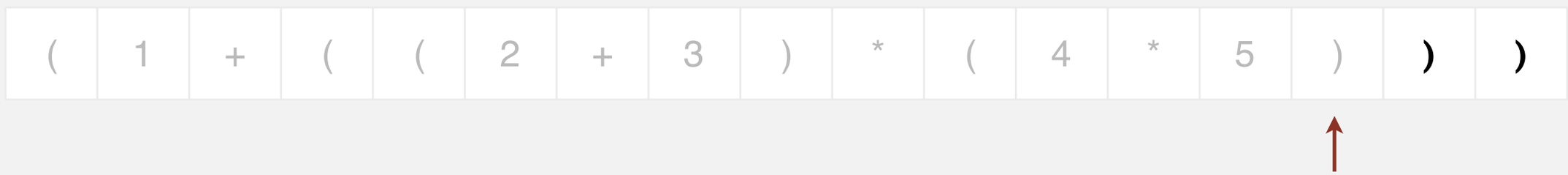

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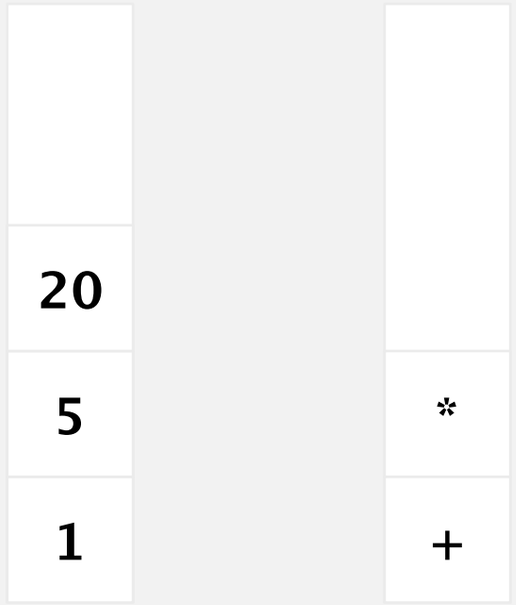

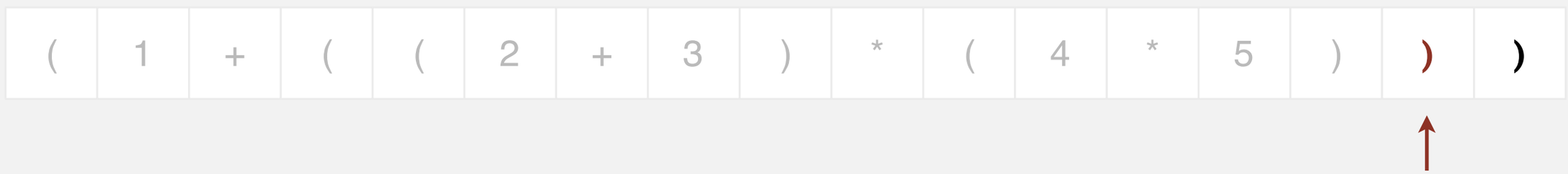

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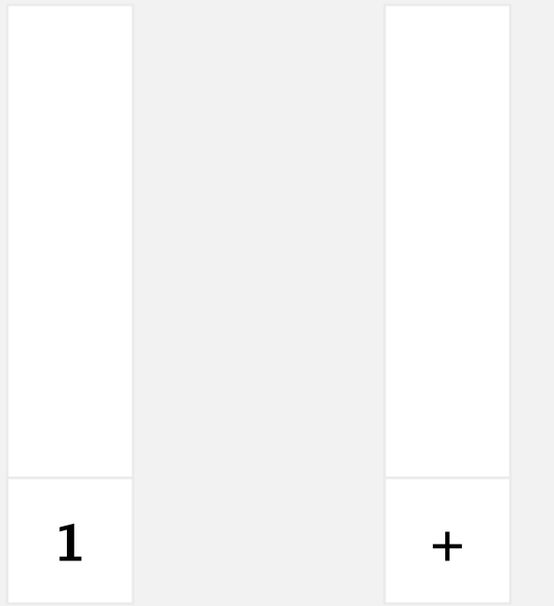

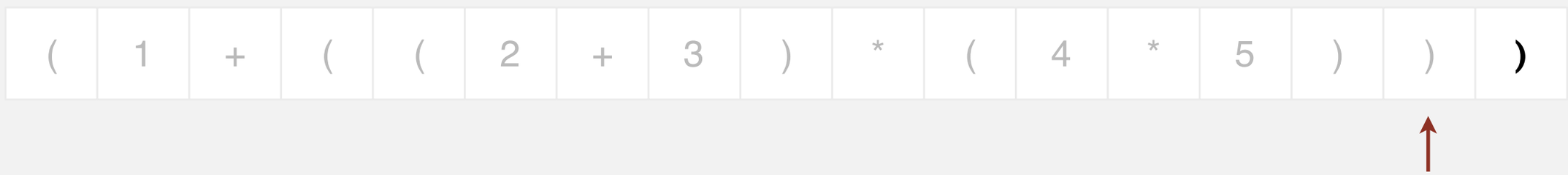

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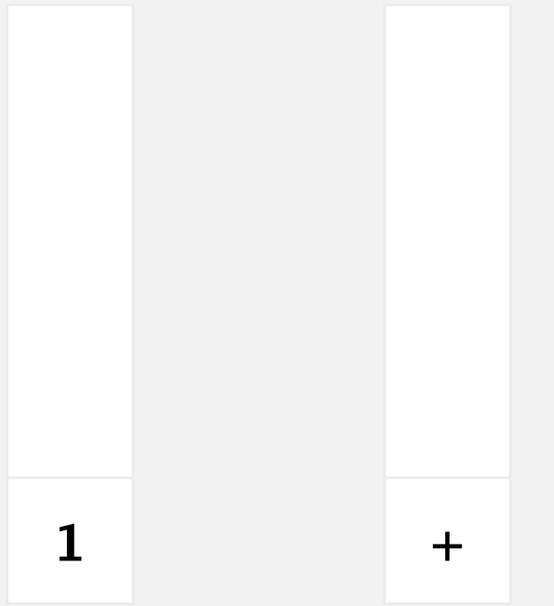

20	*	5	=	100

(	1	+	(	(	2	+	3	)	*	(	4	*	5	)	)	)

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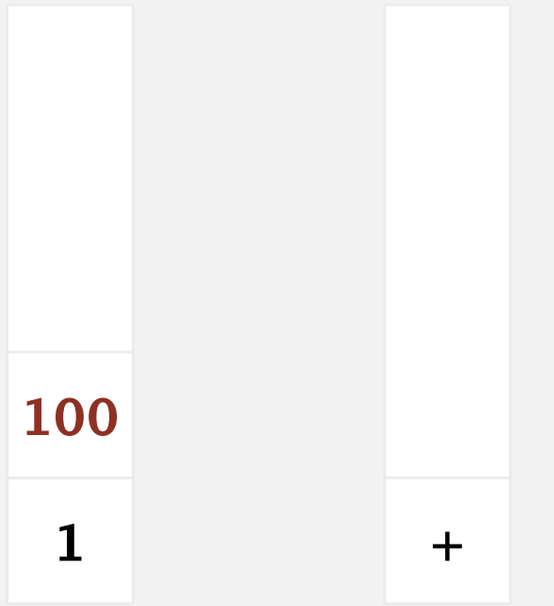

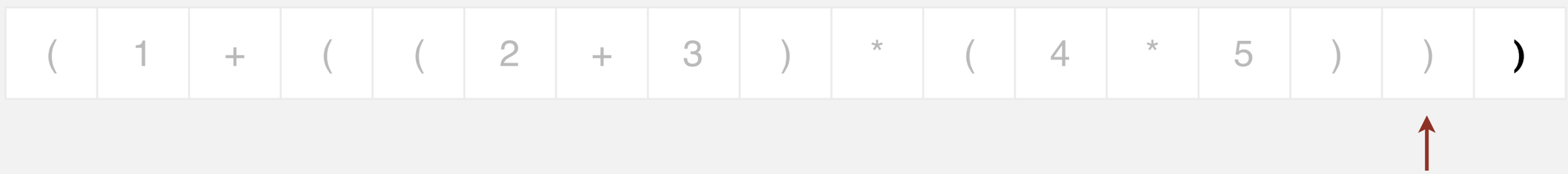

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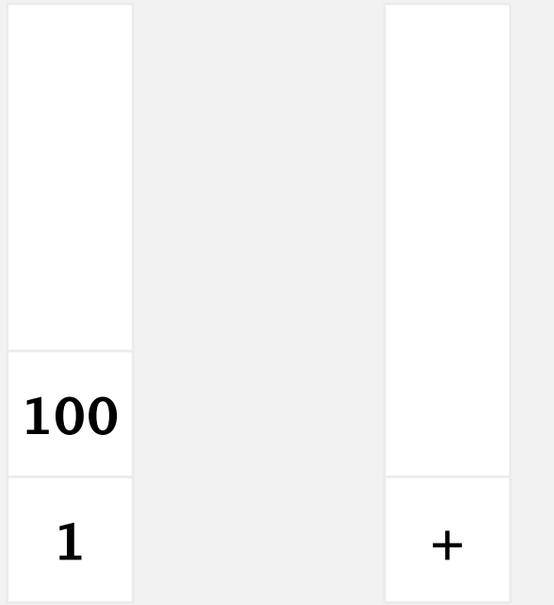

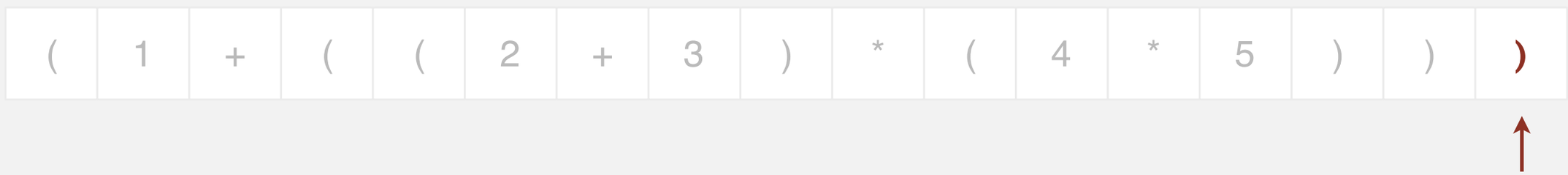

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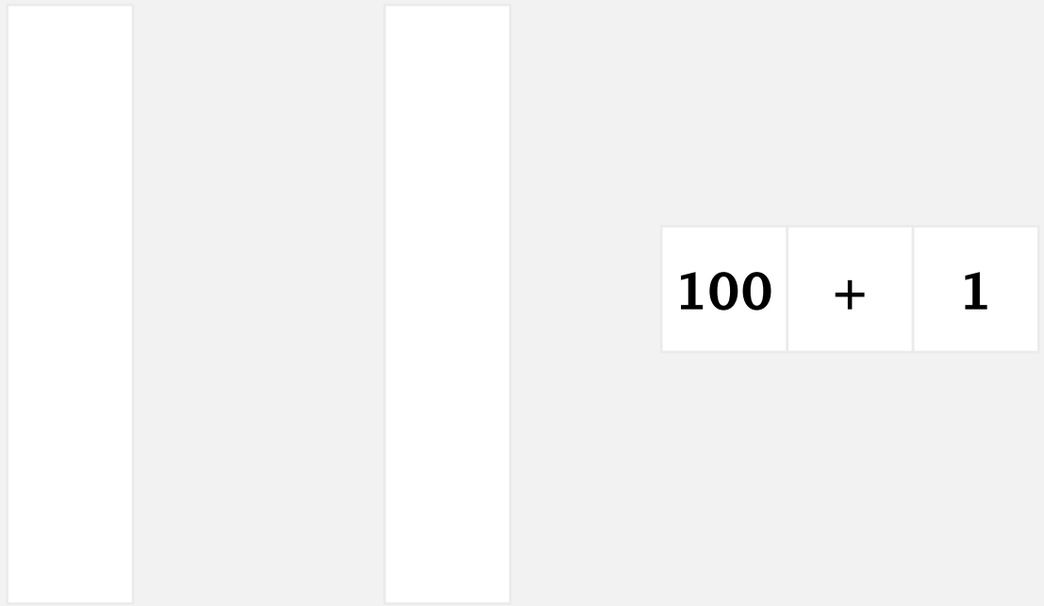

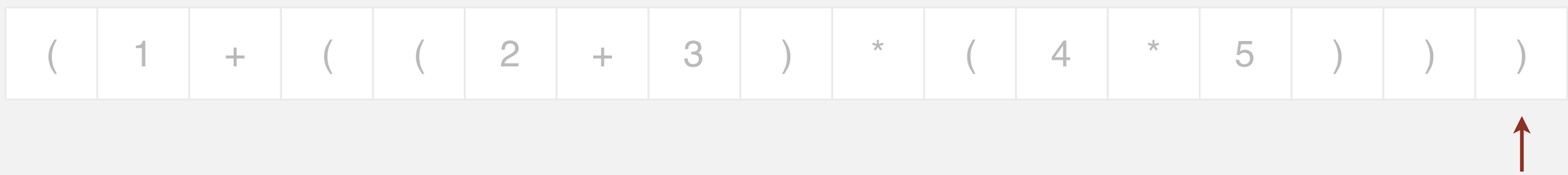

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value stack

operator stack

100	+	1	=	101

(	1	+	(	(	2	+	3	)	*	(	4	*	5	)	)	)

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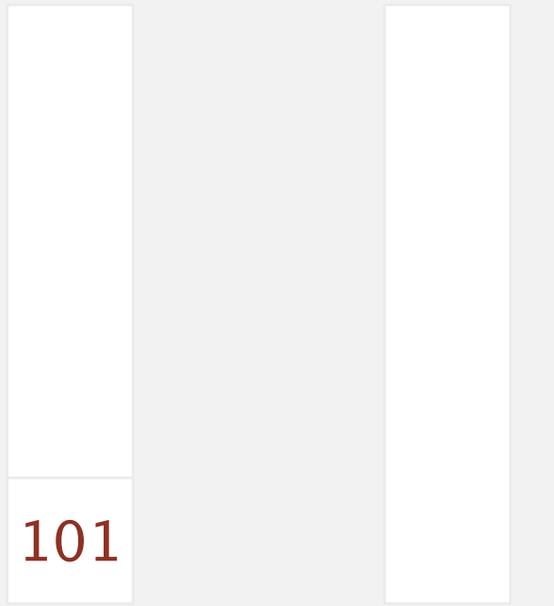

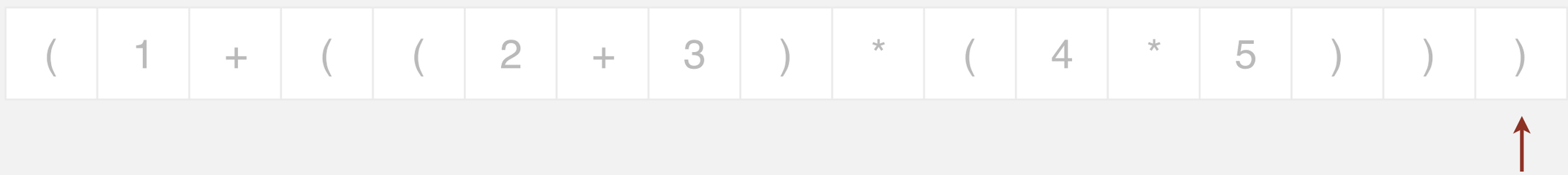

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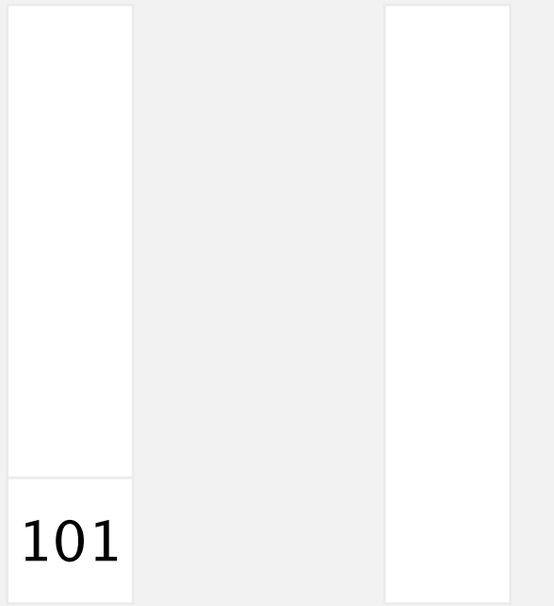

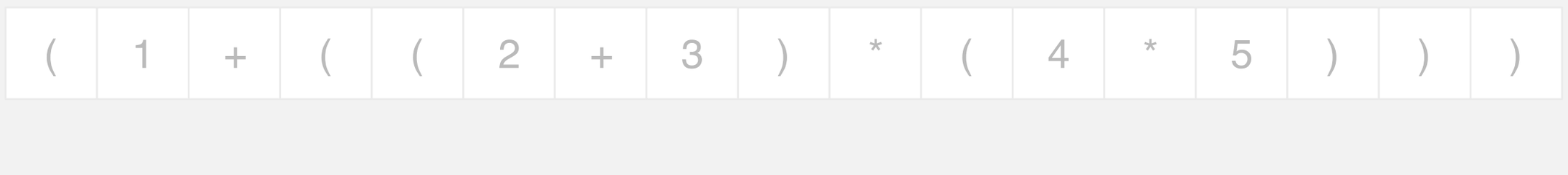

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End: if there are any operators remaining in the operator stack, then implement them.

result

(	1	+	(	(	2	+	3	)	*	(	4	*	5	)	)	)