

Global	
ins	proc
i	-
pc	4

Global	
ins	proc
i	-
pc	4

ins	2	ls	[1, 2, 3]
	1	e	0
	0	pc	4 0

Global	
ins	proc
i	[0, 1, 2, 3]
pc	4

ins	2	ls	[1, 2, 3]
	1	e	0
	0	pc	4 0

IMPRIME: [0,1,2,3]

Global	
ins	proc
i	[0,1,2,3]
pc	5

ins	2	ls	[1,2,3]
	1	e	0
	0	pc	4 0

IMPRIME: [0,1,2,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[1, 2, 3]
	1	e	0
	0	pc	4 0

IMPRIME: [0,1,2,3]

Global

ins	proc
i	-
pc	4

ins

2

ls

[1,2,3]

1

e

0

0

pc

0 1

IMPRIME: [0,1,2,3]

Global	
ins	proc
i	-
pc	4

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	± 2

IMPRIME: [0,1,2,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[2,3]
	1	e	0
	0	pc	2 0

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	1 2



IMPRIME: [0,1,2,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[2,3]
	1	e	0
	0	pc	2 0

ins	3	i	[0,2,3]
	2	ls	[1,2,3]
	1	e	0
	0	pc	1 2

IMPRIME: [0,1,2,3]

ins	2	ls	[2,3]
	1	e	0
	0	pc	2 0

Global

ins	proc
i	-
pc	4

ins	3	i	[0,2,3]
	2	ls	[1,2,3]
	1	e	0
	0	pc	2 3

IMPRIME:  
[0,1,2,3]

Global	
ins	proc
i	[1, 0, 2, 3]
pc	4

ins	2	ls	[2, 3]
	1	e	0
	0	pc	2 0

ins	3	i	[0, 2, 3]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	2 3

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

Global	
ins	proc
i	[1, 0, 2, 3]
pc	5

ins	2	ls	[2, 3]
	1	e	0
	0	pc	2 0

ins	3	i	[0, 2, 3]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	2 3

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[2,3]
	1	e	0
	0	pc	2 0

ins	3	i	[0,2,3]
	2	ls	[1,2,3]
	1	e	0
	0	pc	2 3

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[2,3]
	1	e	0
	0	pc	2 0

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[2,3]
	1	e	0
	0	pc	0 1

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

Global	
ins	proc
i	-
pc	4

ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	1 2

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2



IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	1 2

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	[0, 3]
	2	ls	[2, 3]
	1	e	0
	0	pc	1 2

Global	
ins	proc
i	-
pc	4

ins	3	i	-
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	[0, 3]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3

Global	
ins	proc
i	-
pc	4

ins	3	i	-
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	[0, 3]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3

ins	3	i	[2, 0, 3]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	3 2

Global	
ins	proc
i	-
pc	4

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	[0, 3]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3

ins	3	i	[2, 0, 3]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	2 3

Global	
ins	proc
i	-
pc	4

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	[0, 3]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3

ins	3	i	[2, 0, 3]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	2 3

Global	
ins	proc
i	[1, 2, 0, 3]
pc	4

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	[1, 2, 0, 3]
pc	5

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	[0, 3]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3

ins	3	i	[2, 0, 3]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	2 3

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	[0, 3]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3

ins	3	i	[2, 0, 3]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	2 3



IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	[0, 3]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3

Global

ins	proc
i	-
pc	4

ins	3	i	-
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

ins	2	ls	[3]
	1	e	0
	0	pc	0

ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

Global

ins	proc
i	-
pc	4

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

ins	2	ls	[3]
	1	e	0
	0	pc	0 1

ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

Global

ins	proc
i	-
pc	4

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

ins

3

i

-

2

ls

[3]

1

e

0

0

pc

1 2

ins

3

i

-

2

ls

[2,3]

1

e

0

0

pc

3 2

ins

3

i

-

2

ls

[1,2,3]

1

e

0

0

pc

3 2

Global

ins

proc

i

-

pc

4

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0

ins	3	i	-
	2	ls	[3]
	1	e	0
	0	pc	1 2

ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	1 2
ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2
ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2
ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	[3,0]
	2	ls	[2,3]
	1	e	0
	0	pc	3 2
ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2



IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	[3,0]
	2	ls	[2,3]
	1	e	0
	0	pc	2 3
ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	[3,0]
	2	ls	[2,3]
	1	e	0
	0	pc	2 3
ins	3	i	[2,3,0]
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	[3,0]
	2	ls	[2,3]
	1	e	0
	0	pc	2 3
ins	3	i	[2,3,0]
	2	ls	[1,2,3]
	1	e	0
	0	pc	2 3

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]

Global	
ins	proc
i	[1, 2, 3, 0]
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	[3, 0]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3
ins	3	i	[2, 3, 0]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	2 3

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]  
[1,2,3,0]

Global	
ins	proc
i	[1, 2, 3, 0]
pc	5

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	[3, 0]
	2	ls	[2, 3]
	1	e	0
	0	pc	2 3
ins	3	i	[2, 3, 0]
	2	ls	[1, 2, 3]
	1	e	0
	0	pc	2 3

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]  
[1,2,3,0]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	[3,0]
	2	ls	[2,3]
	1	e	0
	0	pc	2 3
ins	3	i	[2,3,0]
	2	ls	[1,2,3]
	1	e	0
	0	pc	2 3

IMPRIME:  
 [0,1,2,3]  
 [1,0,2,3]  
 [1,2,0,3]  
 [1,2,3,0]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0

ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3

ins	3	i	[3,0]
	2	ls	[2,3]
	1	e	0
	0	pc	2 3

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:

[0,1,2,3]

[1,0,2,3]

[1,2,0,3]

[1,2,3,0]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0
ins	3	i	[0]
	2	ls	[3]
	1	e	0
	0	pc	2 3
ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2
ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2



ins	2	ls	[]
	1	e	0
	0	pc	0

ins	3	i	-
	2	ls	[3]
	1	e	0
	0	pc	3 2

ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:

[0,1,2,3]

[1,0,2,3]

[1,2,0,3]

[1,2,3,0]

Global	
ins	proc
i	-
pc	4

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]  
[1,2,3,0]

Global	
ins	proc
i	-
pc	4

ins	2	ls	[]
	1	e	0
	0	pc	0 1
ins	3	i	-
	2	ls	[3]
	1	e	0
	0	pc	3 2
ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2
ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

ins

2

ls

[]

1

e

0

0

pc

0 1

DESEMPILADO

ins

3

i

-

2

ls

[3]

1

e

0

0

pc

3 2

IMPRIME:

[0,1,2,3]

[1,0,2,3]

[1,2,0,3]

[1,2,3,0]

Global

ins

proc

i

-

pc

4

ins

3

i

-

2

ls

[2,3]

1

e

0

0

pc

3 2

ins

3

i

-

2

ls

[1,2,3]

1

e

0

0

pc

3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]  
[1,2,3,0]

Global	
ins	proc
i	-
pc	4

ins	3	i	-
	2	ls	[3]
	1	e	0
	0	pc	3 2

ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2

ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]  
[1,2,3,0]

Global	
ins	proc
i	-
pc	4

ins	3	i	-
	2	ls	[2,3]
	1	e	0
	0	pc	3 2
ins	3	i	-
	2	ls	[1,2,3]
	1	e	0
	0	pc	3 2

IMPRIME:  
[0,1,2,3]  
[1,0,2,3]  
[1,2,0,3]  
[1,2,3,0]

Global	
ins	proc
i	-
pc	4

ins	3	i	-
	2	ls	[1,2,3]
	1	e	
	0	pc	3 2

DESEMPILADO

IMPRIME:

[0,1,2,3]

[1,0,2,3]

[1,2,0,3]

[1,2,3,0]

Global

ins

proc

i

pc

4

TERMINADO

IMPRIME:

[0, 1, 2, 3]

[1, 0, 2, 3]

[1, 2, 0, 3]

[1, 2, 3, 0]