

Forelesning 6

Bonusmateriale

**Ting som ikke ble med i forelesningen,
men som kanskje kan være av interesse**

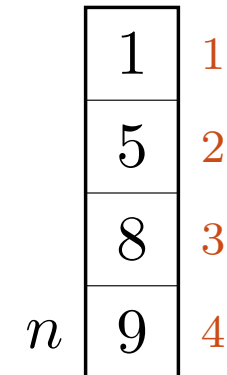
Rekursiv stavkutting

CUT(p, n)

```

1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

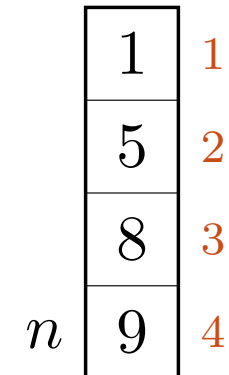
$q, t = -, -$



```

CUT( $p, n$ )
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```

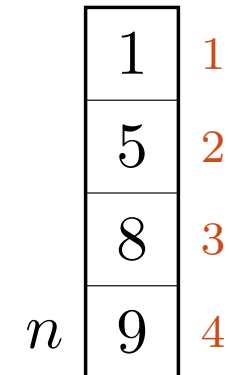
$q, t = -, -$



```

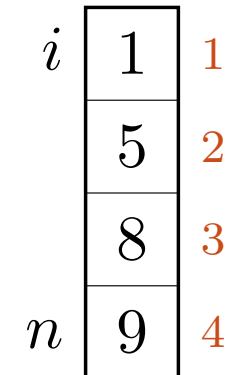
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```

$q, t = -\infty, -$



```

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```



$q, t = -\infty, -$

CUT(p, n)

```

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```

i	1	1
	5	2
n	8	3
	9	4

$q, t = -\infty, - \rightarrow -, -$


```

CUT( $p, n$ )
1  if  $n == 0$ 
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$q, t = -\infty, - \rightarrow -, -$

```

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```

i	1	1
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n	8	3
	9	4

$q, t = -\infty, - \rightarrow -\infty, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
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```

i	1	1
	5	2
n	8	3
	9	4

$q, t = -\infty, - \rightarrow -\infty, -$

CUT(p, n)

```

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i	1	1
n	5	2
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	9	4

$q, t = -\infty, - \rightarrow -\infty, - \rightarrow -, -$

```

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i	1	1
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	9	4

$q, t = -\infty, - \rightarrow -\infty, - \rightarrow -, -$

```

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7  return  $q$ 
    
```

i	1	1
n	5	2
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	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
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7  return  $q$ 
    
```

i	1	1
n	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, -$

CUT(p, n)

```

1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -, -$


```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

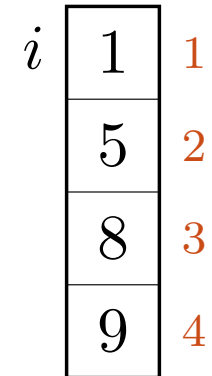
i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, -$

CUT(p, n)

```

1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2  return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 0

i	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, 1$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 1

i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle 1, 1$


```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
n	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, 2$

```

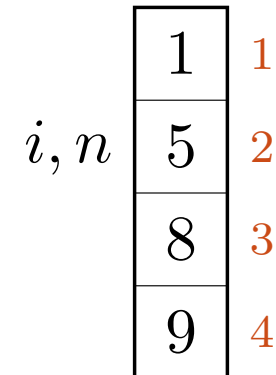
CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
n	5	2
	8	3
	9	4

$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

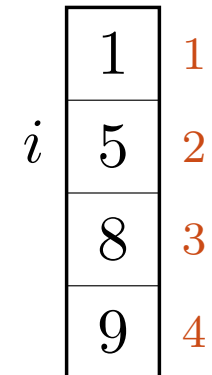


$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2$

CUT(p, n)

```

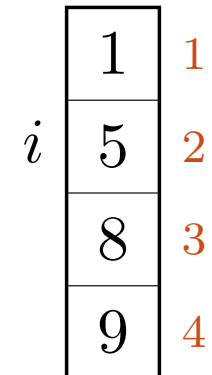
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3   $q = -\infty$ 
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5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2 \rightarrow -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
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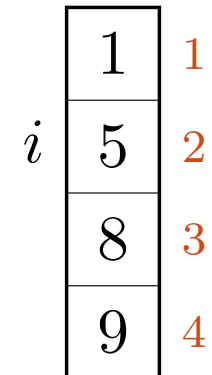
$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2 \rightarrow -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
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3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 0



$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2 \rightarrow -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 5$

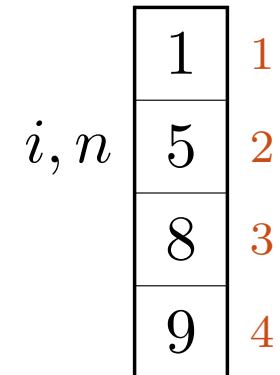
```

CUT( $p, n$ )
1  if  $n == 0$ 
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3   $q = -\infty$ 
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6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 5

$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 5, 5$




```

CUT( $p, n$ )
1  if  $n == 0$ 
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3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

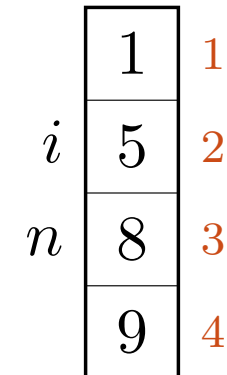
	1	1
i	5	2
n	8	3
	9	4

$q, t = -\infty, - \rightarrow -\infty, 6$

```

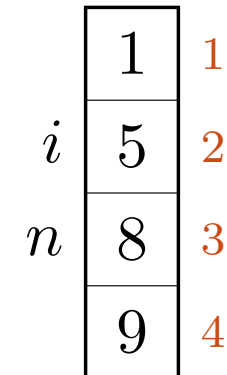
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5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

$q, t = -\infty, - \rightarrow 6, 6$



```

CUT( $p, n$ )
1  if  $n == 0$ 
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4  for  $i = 1$  to  $n$ 
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7  return  $q$ 
    
```

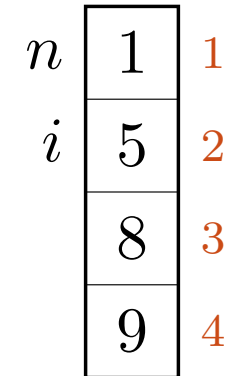


$q, t = -\infty, - \rightarrow 6, 6$

CUT(p, n)

```

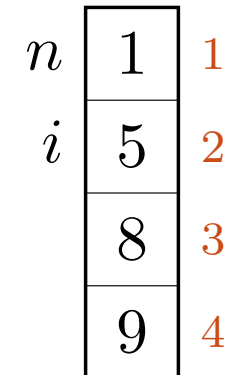
1  if  $n == 0$ 
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6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
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3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
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7  return  $q$ 
    
```



$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
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3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
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6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

n	1	1
i	5	2
	8	3
	9	4

$q, t = -\infty, - \rangle 6, 6 \rangle -\infty, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
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6       $q = \max(q, t)$ 
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```

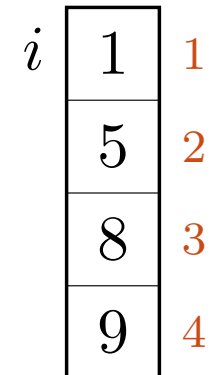
i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -\infty, -$

CUT(p, n)

```

1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -\infty, - \rightarrow -, -$


```

CUT( $p, n$ )
1  if  $n == 0$ 
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7  return  $q$ 
    
```

i	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -\infty, - \rightarrow -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 0

i	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -\infty, - \rightarrow -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -\infty, 1$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 1

$q, t = -\infty, - \rightarrow 6, 6 \rightarrow 1, 1$

i, n	1	1
	5	2
	8	3
	9	4

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
	5	2
n	8	3
	9	4

$q, t = -\infty, - \rightarrow 6, 6$

```

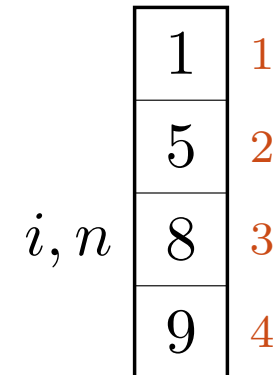
CUT( $p, n$ )
1  if  $n == 0$ 
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3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
	5	2
n	8	3
	9	4

$q, t = -\infty, - \rightarrow 6, 6$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

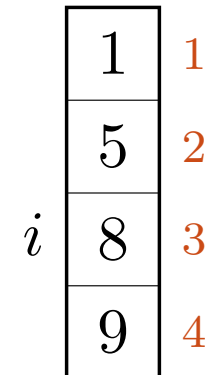


$q, t = -\infty, - \rightarrow 6, 6$

CUT(p, n)

```

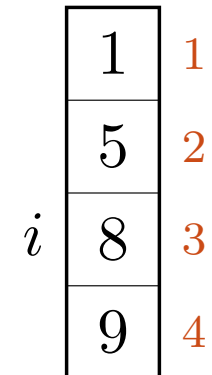
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$


```

CUT( $p, n$ )
1  if  $n == 0$ 
2  return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$

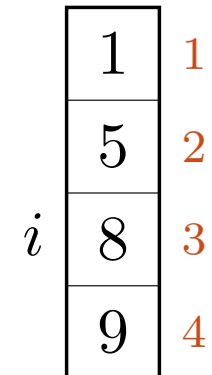
```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 0

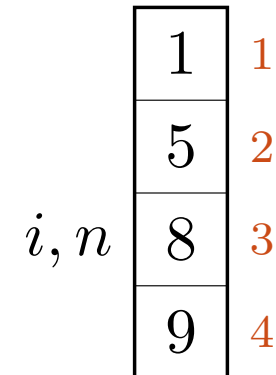
$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

$q, t = -\infty, - \rightarrow 6, 8$



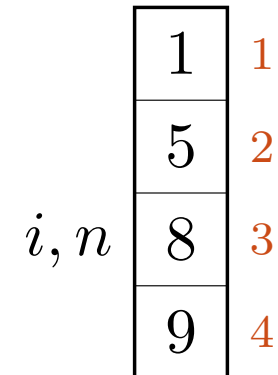
```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 8

$q, t = -\infty, - \rightarrow 8, 8$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

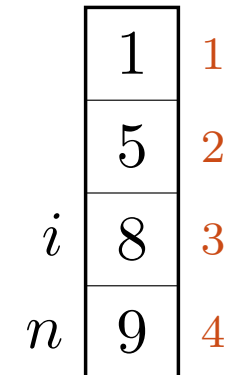
$q, t = -\infty, 9$

	1	1
	5	2
i	8	3
n	9	4

```

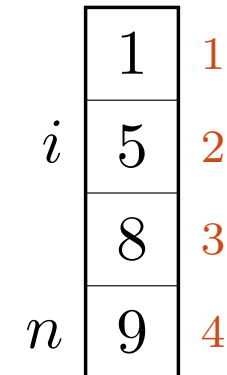
CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

$q, t = 9, 9$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

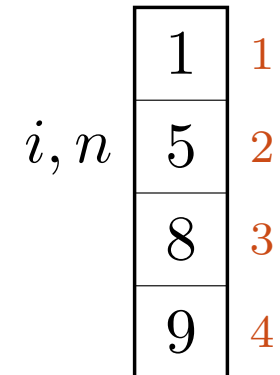


$q, t = 9, 9$

CUT(p, n)

```

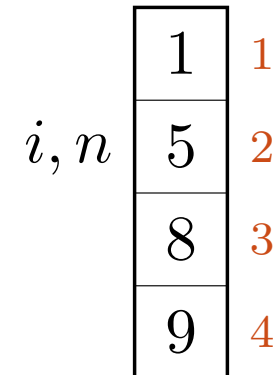
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 9, 9 \text{ › } -, -$


```

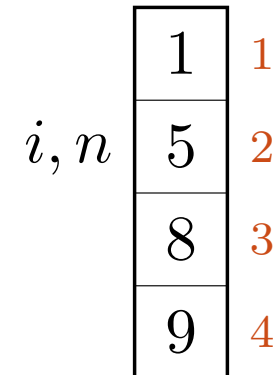
CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 9, 9 \text{ › } -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 9, 9 \succ -\infty, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
n	5	2
	8	3
	9	4

$q, t = 9, 9 \succ -\infty, -$

CUT(p, n)

```

1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = 9, 9 \succ -\infty, - \succ -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = 9, 9 \succ -\infty, - \succ -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = 9, 9 \succ -\infty, - \succ -\infty, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

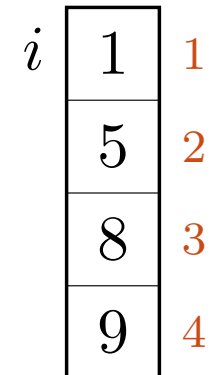
i, n	1	1
	5	2
	8	3
	9	4

$q, t = 9, 9 \succ -\infty, - \succ -\infty, -$

CUT(p, n)

```

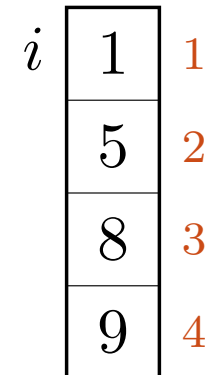
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 9, 9 \succ -\infty, - \succ -\infty, - \succ -, -$


```

CUT( $p, n$ )
1  if  $n == 0$ 
2  return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 9, 9 \succ -\infty, - \succ -\infty, - \succ -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

→ 0
    
```

i	1	1
	5	2
	8	3
	9	4

$q, t = 9, 9 \succ -\infty, - \succ -\infty, - \succ -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = 9, 9 \succ -\infty, - \succ -\infty, 1$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 1

$q, t = 9, 9 \succ -\infty, - \succ 1, 1$

i, n	1	1
	5	2
	8	3
	9	4

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
n	5	2
	8	3
	9	4

$q, t = 9, 9 \succ -\infty, 2$

```

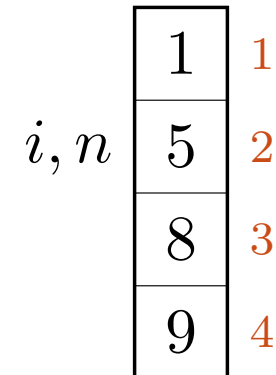
CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
n	5	2
	8	3
	9	4

$q, t = 9, 9 \succ 2, 2$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

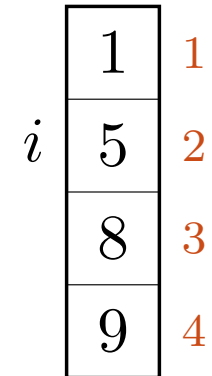


$q, t = 9, 9 \succ 2, 2$

CUT(p, n)

```

1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

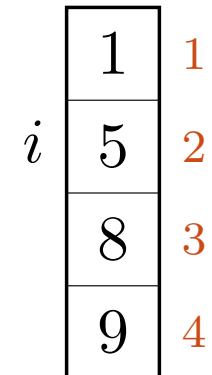


$q, t = 9, 9 \succ 2, 2 \succ -, -$


```

CUT( $p, n$ )
1  if  $n == 0$ 
2  return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

$q, t = 9, 9 \succ 2, 2 \succ -, -$



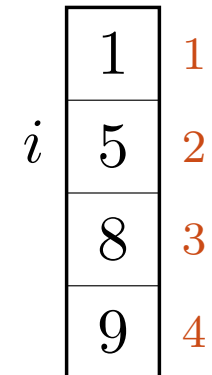
```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

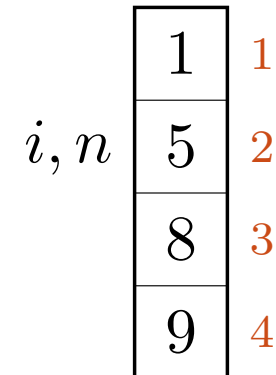
→ 0

$q, t = 9, 9 \succ 2, 2 \succ -, -$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```



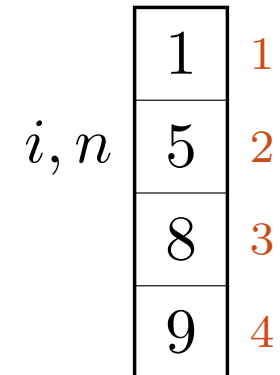
$q, t = 9, 9 \succ 2, 5$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

→ 5

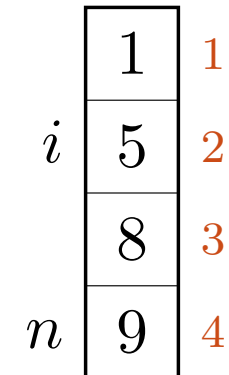
$q, t = 9, 9 \succ 5, 5$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

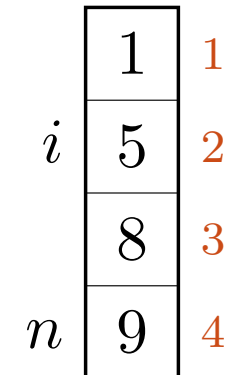
$q, t = 9, 10$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

$q, t = 10, 10$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

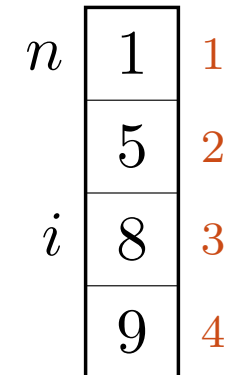
$q, t = 10, 10$

	1	1
	5	2
i	8	3
n	9	4

CUT(p, n)

```

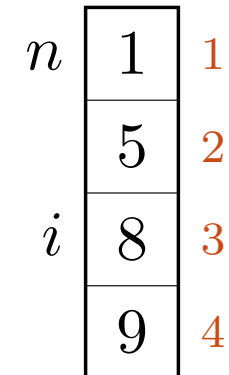
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 10, 10 \text{ › } -, -$


```

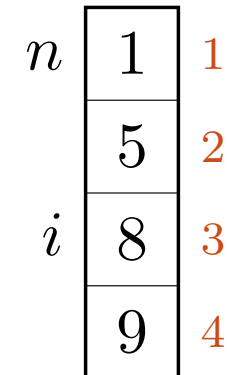
CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 10, 10 \text{ › } -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 10, 10 \succ -\infty, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

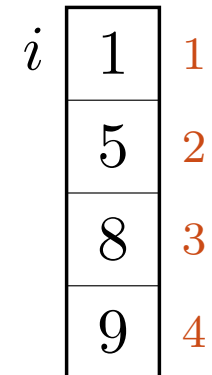
i, n	1	1
	5	2
	8	3
	9	4

$q, t = 10, 10 \succ -\infty, -$

CUT(p, n)

```

1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 10, 10 \succ -\infty, - \succ -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2  return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

i	1	1
	5	2
	8	3
	9	4

$q, t = 10, 10 \ \> \ -\infty, - \ \> \ -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

→ 0

i	1	1
	5	2
	8	3
	9	4

$q, t = 10, 10 \triangleright -\infty, - \triangleright -, -$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

i, n	1	1
	5	2
	8	3
	9	4

$q, t = 10, 10 \succ -\infty, 1$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

```

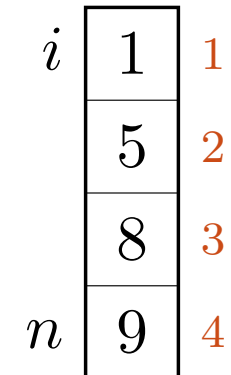
→ 1

$q, t = 10, 10 \text{ › } 1, 1$

i, n	1	1
	5	2
	8	3
	9	4


```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```



$q, t = 10, 9$

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

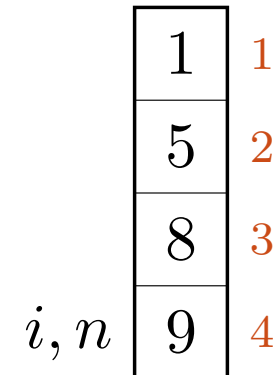
$q, t = 10, 9$

i	1	1
	5	2
	8	3
n	9	4

```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

$q, t = 10, 9$

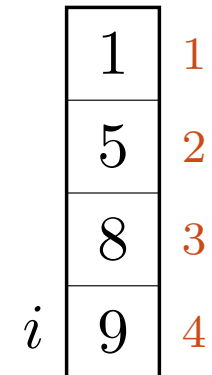


CUT(p, n)

```

1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

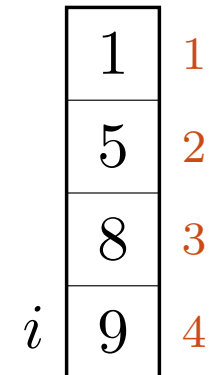
$q, t = 10, 9 \triangleright -, -$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2  return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 
    
```

$q, t = 10, 9 \text{ › } -, -$

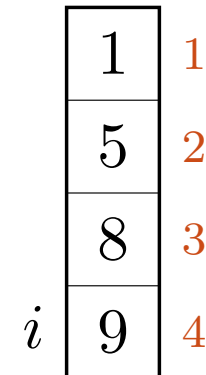


```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

→ 0
    
```

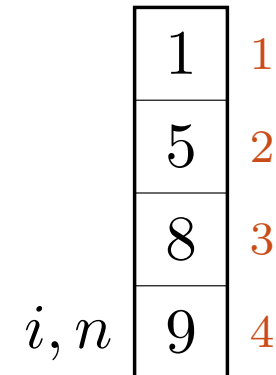
$q, t = 10, 9 \succ -, -$



```

CUT( $p, n$ )
1  if  $n == 0$ 
2      return 0
3   $q = -\infty$ 
4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6   $q = \max(q, t)$ 
7  return  $q$ 
    
```

$q, t = 10, 9$

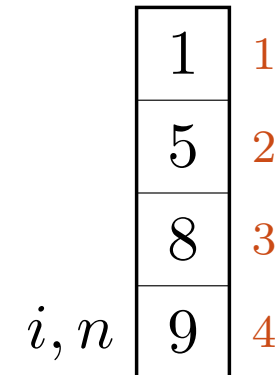


```

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4  for  $i = 1$  to  $n$ 
5       $t = p[i] + \text{CUT}(p, n - i)$ 
6       $q = \max(q, t)$ 
7  return  $q$ 

→ 10
    
```

$q, t = 10, 9$



MEMOIZED-CUT-ROD(p, n)

p pris
 n lengde

Rekursiv løsning med lagring av deløsninger!

MEMOIZED-CUT-ROD(p, n)
1 let $r[0..n]$ be a new array

p pris
 n lengde
 r memo

Til lagring av deløsninger, for å avbryte rekursjonen

MEMOIZED-CUT-ROD(p, n)
1 let $r[0..n]$ be a new array
2 **for** $i = 0$ **to** n

p pris
 n lengde
 r memo
 i splitt

```
MEMOIZED-CUT-ROD( $p, n$ )
1  let  $r[0..n]$  be a new array
2  for  $i = 0$  to  $n$ 
3       $r[i] = -\infty$ 
```

p pris
 n lengde
 r memo
 i splitt

Markør for at vi ikke har løst delproblemene ennå

```
MEMOIZED-CUT-ROD( $p, n$ )
1  let  $r[0..n]$  be a new array
2  for  $i = 0$  to  $n$ 
3       $r[i] = -\infty$ 
4  return AUX( $p, n, r$ )
```

p pris
 n lengde
 r memo
 i splitt

Solve den rekursive algoritmen

$AUX(p, n, r)$

p pris
 n lengde
 r memo

Rekursiv stavkutting, med delløsninger lagret i r

$AUX(p, n, r)$
1 **if** $r[n] \geq 0$

p pris
 n lengde
 r memo

Allerede løst for n ?

```
AUX( $p, n, r$ )  
1  if  $r[n] \geq 0$   
2      return  $r[n]$ 
```

p pris
 n lengde
 r memo

Avbryt rekursjonen. Kutter av et helt rekursjons-deltre!


```
AUX( $p, n, r$ )  
1  if  $r[n] \geq 0$   
2      return  $r[n]$   
3  if  $n == 0$ 
```

p pris
 n lengde
 r memo

```
AUX( $p, n, r$ )  
1  if  $r[n] \geq 0$   
2      return  $r[n]$   
3  if  $n == 0$   
4       $q = 0$ 
```

p pris
 n lengde
 r memo
 q opt

Ingen lengde, ingen fortjeneste

```
AUX( $p, n, r$ )  
1  if  $r[n] \geq 0$   
2      return  $r[n]$   
3  if  $n == 0$   
4       $q = 0$   
5  else  $q = -\infty$ 
```

p pris
 n lengde
 r memo
 q opt

Skal bli beste løsning

```
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
```

p pris
 n lengde
 r memo
 q opt
 i splitt

Prøv alle splittpunkter

AUX(p, n, r)

```

1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 

```

p pris
 n lengde
 r memo
 q opt
 i splitt
 t temp

Uansett valgt splittpunkt i : Resten må kuttet optimalt

AUX(p, n, r)

```
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
```

p pris
 n lengde
 r memo
 q opt
 i splitt
 t temp

Ble det bedre enn det beste vi har?

AUX(p, n, r)

```
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
```

p pris
 n lengde
 r memo
 q opt
 i splitt
 t temp

Lagre den beste løsningen vi fant

```
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
```

p pris
 n lengde
 r memo
 q opt
 i splitt
 t temp

Returner den beste løsningen vi fant

AUX(p, n, r)

```
1 if  $r[n] \geq 0$   
2     return  $r[n]$   
3 if  $n == 0$   
4      $q = 0$   
5 else  $q = -\infty$   
6     for  $i = 1$  to  $n$   
7          $t = p[i] + \text{AUX}(p, n - i, r)$   
8          $q = \max(q, t)$   
9  $r[n] = q$   
10 return  $q$ 
```

$q, t = -, -$

4

```
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
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$q, t = -, -$



```
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$q, t = -\infty, -$



```
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```

$q, t = -\infty, -$



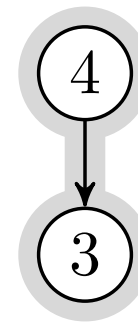
AUX(p, n, r)

```

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```

$q, t = -\infty, - \rightarrow -, -$

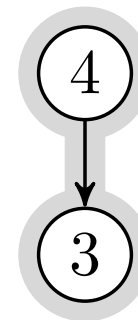


```

AUX( $p, n, r$ )
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```

$q, t = -\infty, - \rightarrow -, -$

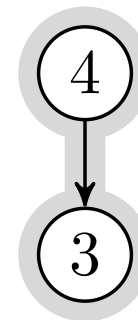


```

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```

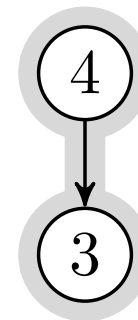
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$q, t = -\infty, - \rightarrow -\infty, -$

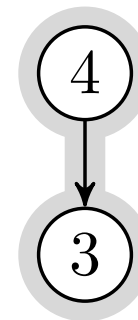


```

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```

$q, t = -\infty, - \rightarrow -\infty, - \rightarrow -, -$



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$q, t = -\infty, - \rightarrow -\infty, - \rightarrow -, -$

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$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, -$



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```



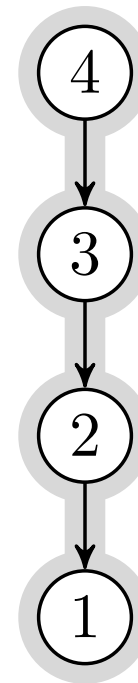
$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, -$

AUX(p, n, r)

```

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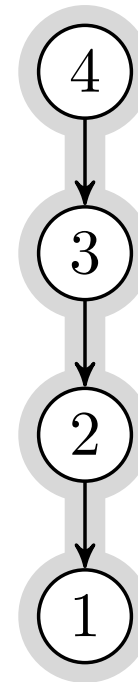
```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -, -$


```

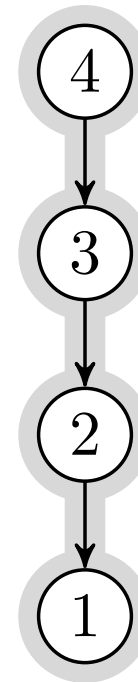
AUX( $p, n, r$ )
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```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -, -$

```

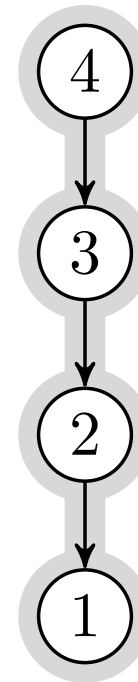
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```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -, -$

```

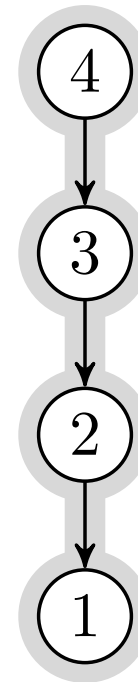
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9   $r[n] = q$ 
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```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
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```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, -$

AUX(p, n, r)

```

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8           $q = \max(q, t)$ 
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10 return  $q$ 

```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle - , -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
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```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle - , -$

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```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle - , -$

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```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle 0, -$


```

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```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle 0, -$

```

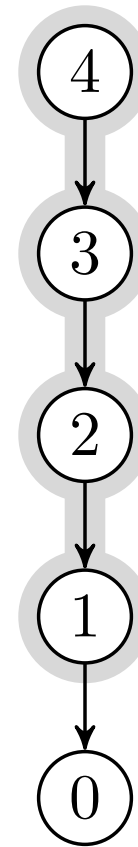
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4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 0
    
```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle 0, -$

```

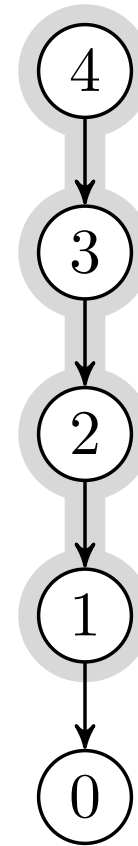
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle -\infty, 1$

```

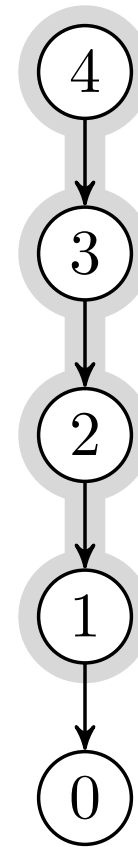
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```



$q, t = -\infty, - \rangle -\infty, - \rangle -\infty, - \rangle 1, 1$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

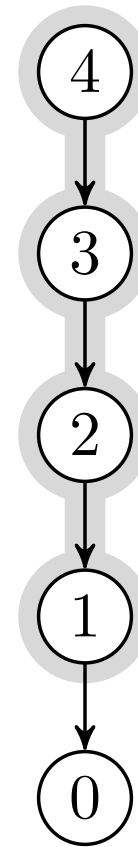


$q, t = -\infty, - \rightarrow -\infty, - \rightarrow -\infty, - \rightarrow 1, 1$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 1
    
```

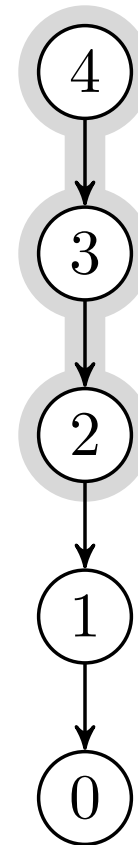
$q, t = -\infty, - \rightarrow -\infty, - \rightarrow -\infty, - \rightarrow 1, 1$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

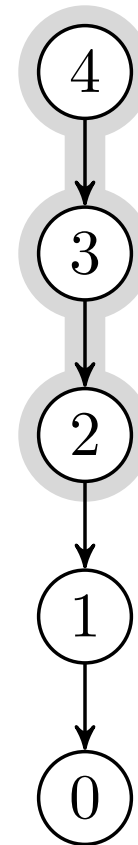
$q, t = -\infty, - \ \rangle \ -\infty, - \ \rangle \ -\infty, 2$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6  for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

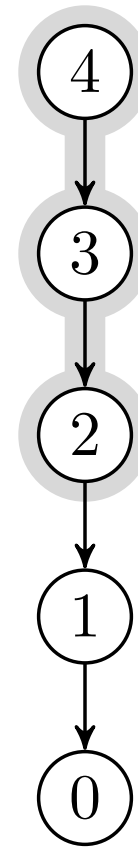
$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2$




```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2$

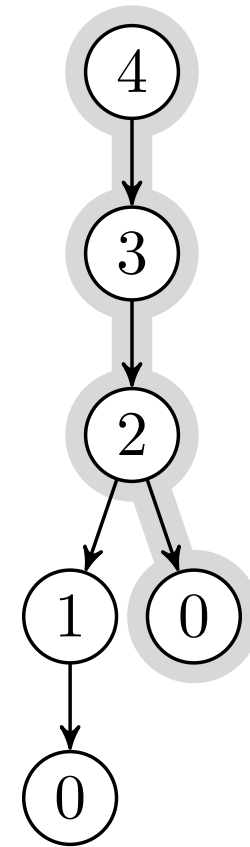


AUX(p, n, r)

```

1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 

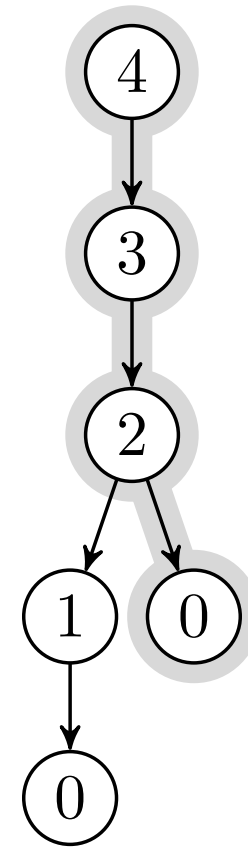
```



$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2 \rightarrow -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2  return  $r[n]$ 
3  if  $n == 0$ 
4     $q = 0$ 
5  else  $q = -\infty$ 
6    for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

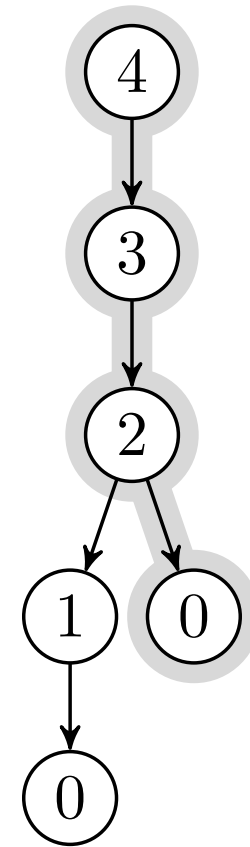


$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2 \rightarrow -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 0
    
```

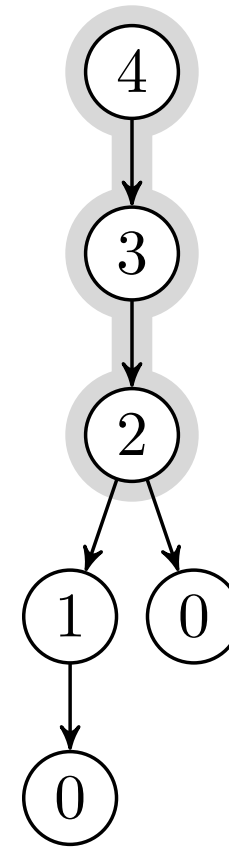
$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 2 \rightarrow -, -$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

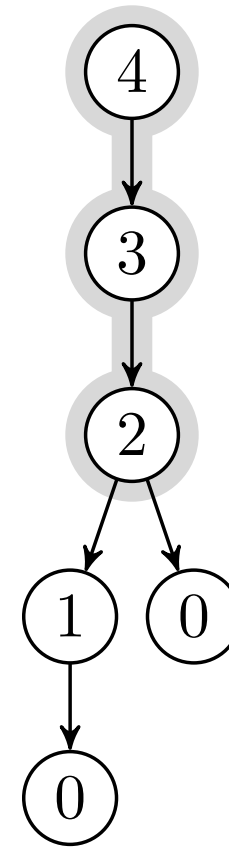
$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 2, 5$



```

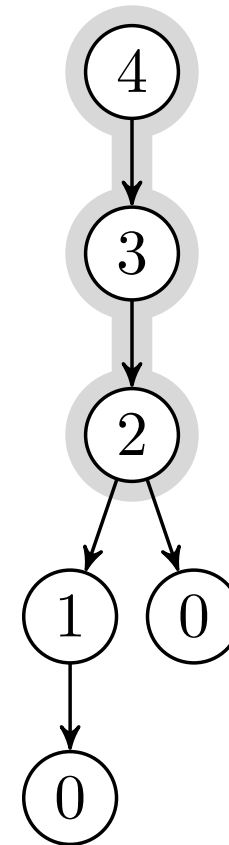
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 5, 5$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

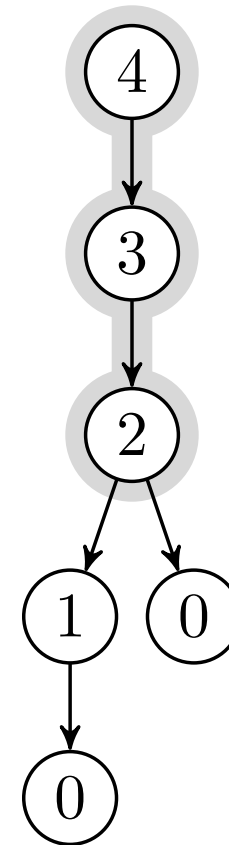


$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 5, 5$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 5
    
```

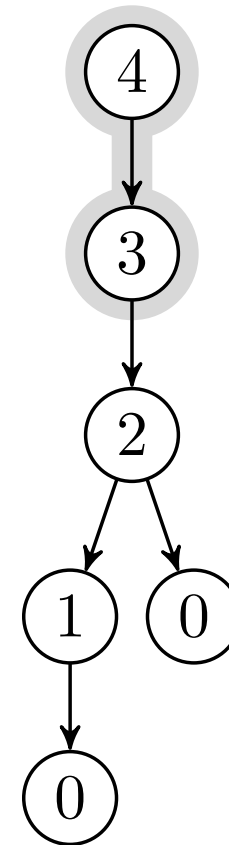
$q, t = -\infty, - \rightarrow -\infty, - \rightarrow 5, 5$




```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

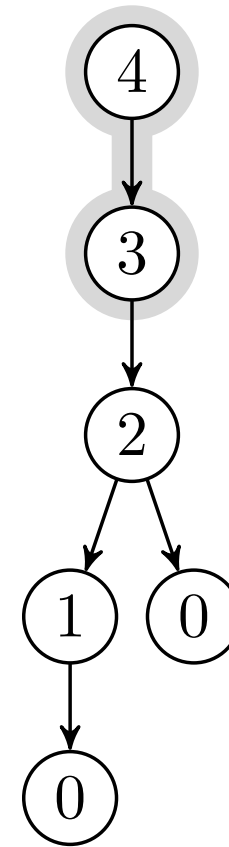
$q, t = -\infty, - \rightarrow -\infty, 6$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6  for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

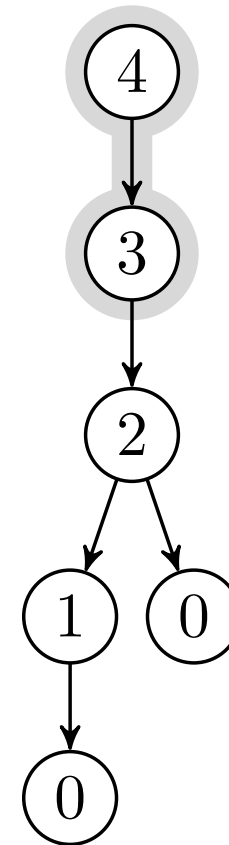
$q, t = -\infty, - \rightarrow 6, 6$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

$q, t = -\infty, - \rightarrow 6, 6$



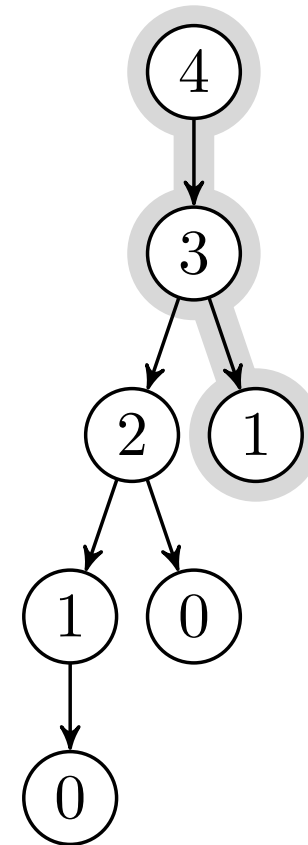
AUX(p, n, r)

```

1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 

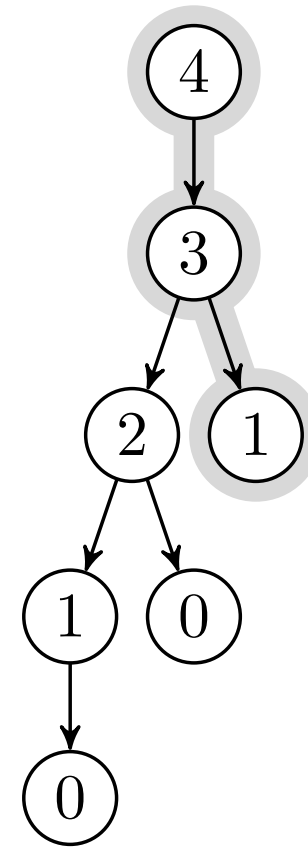
```

$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2  return  $r[n]$ 
3  if  $n == 0$ 
4     $q = 0$ 
5  else  $q = -\infty$ 
6    for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

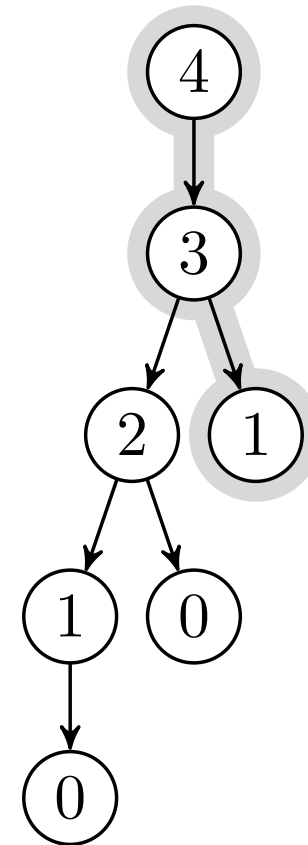


$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 1
    
```

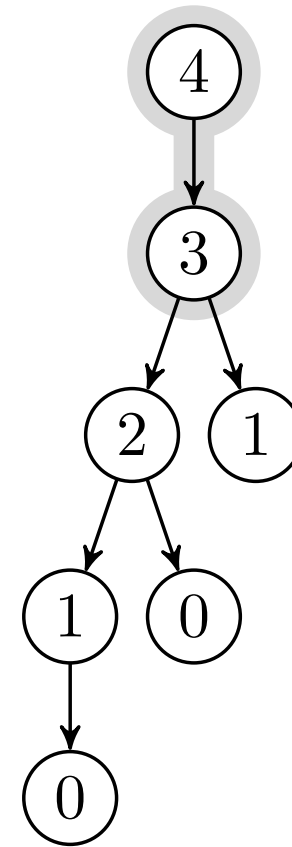
$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

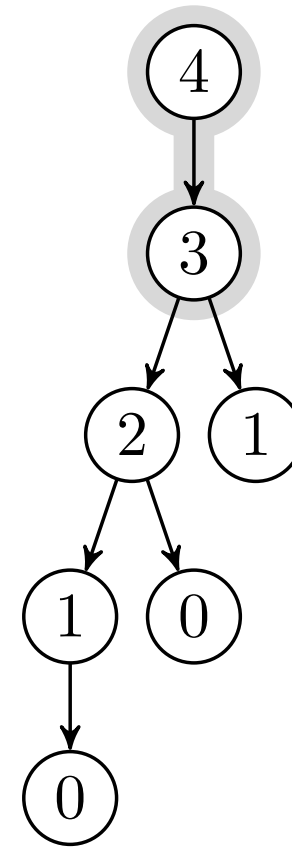
$q, t = -\infty, - \rightarrow 6, 6$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6  for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

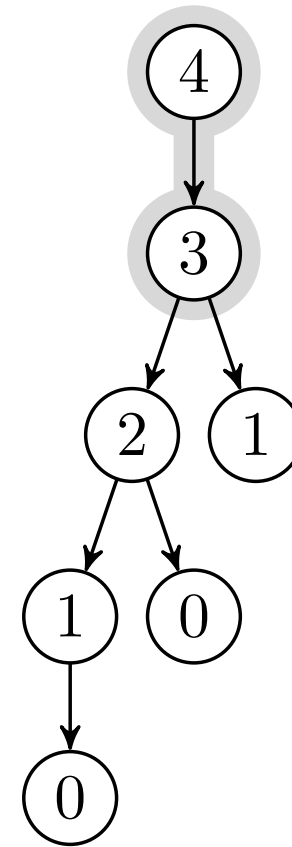
$q, t = -\infty, - \rightarrow 6, 6$




```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

$q, t = -\infty, - \rightarrow 6, 6$

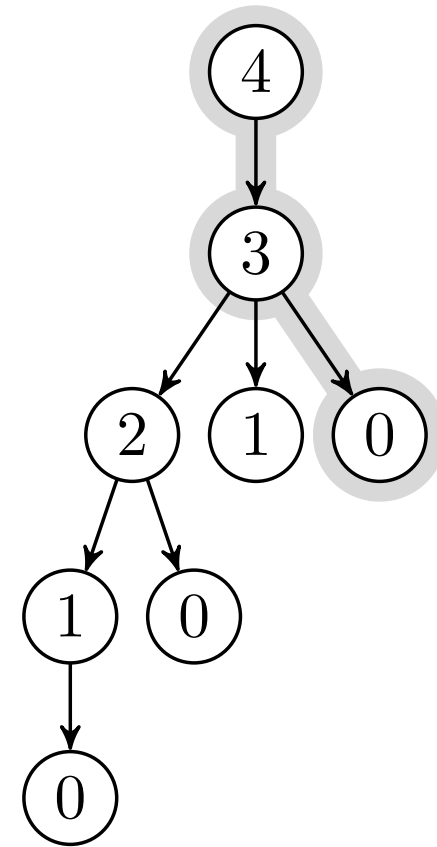


AUX(p, n, r)

```

1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 

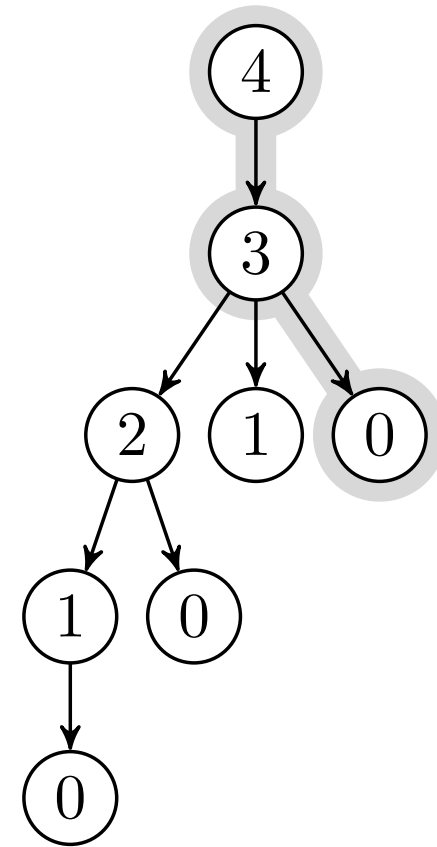
```



$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$

```

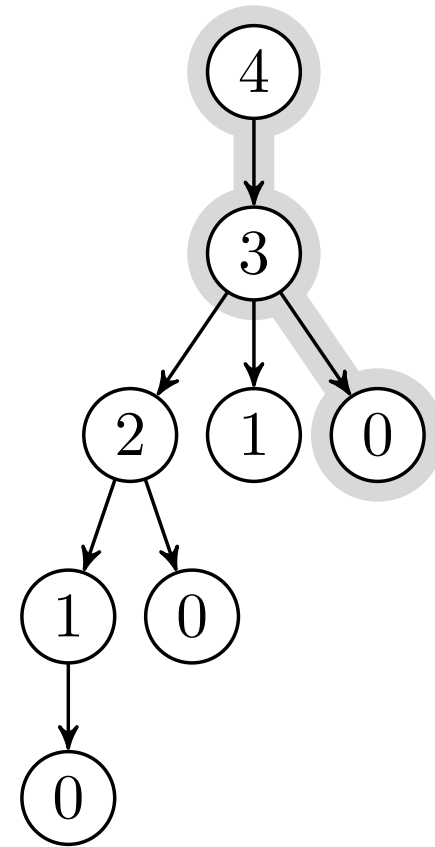
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2  return  $r[n]$ 
3  if  $n == 0$ 
4     $q = 0$ 
5  else  $q = -\infty$ 
6    for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```



$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 0
    
```



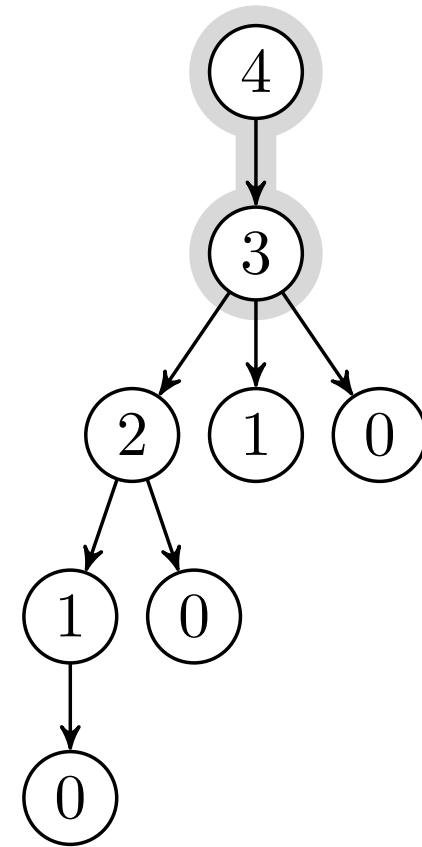
$q, t = -\infty, - \rightarrow 6, 6 \rightarrow -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 

```

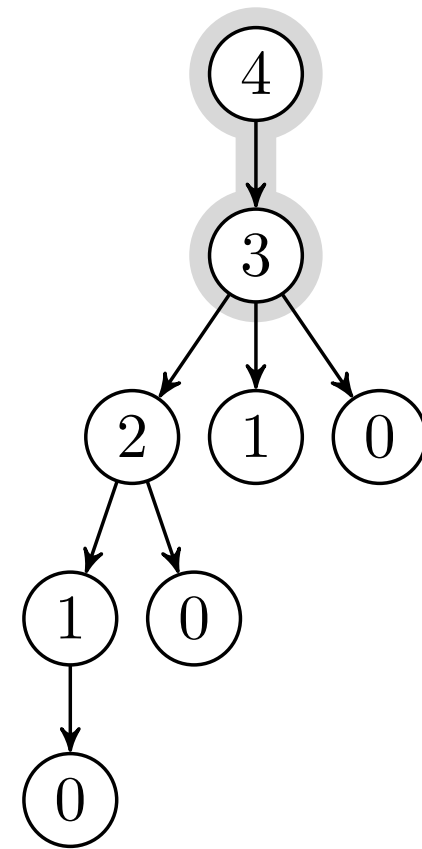
$q, t = -\infty, - \rightarrow 6, 8$



```

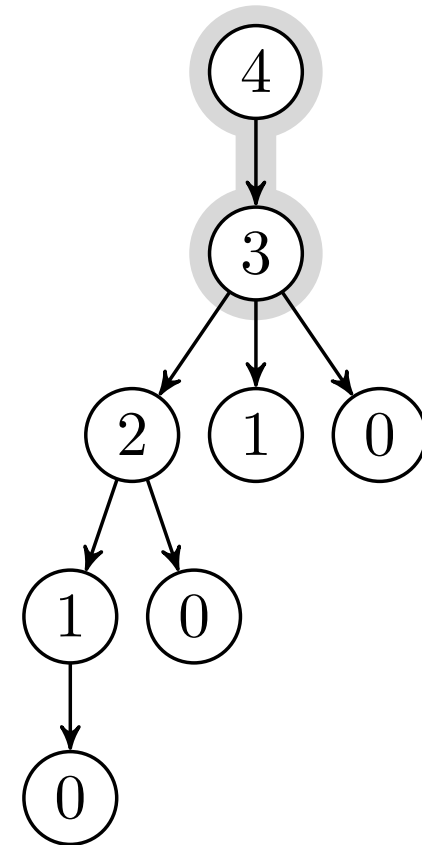
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

$q, t = -\infty, - \rightarrow 8, 8$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

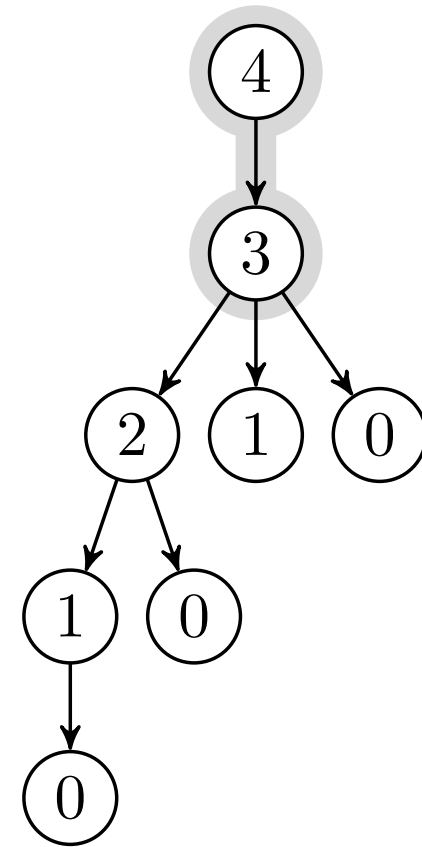


$q, t = -\infty, - \rightarrow 8, 8$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 8
    
```

$q, t = -\infty, - \rightarrow 8, 8$

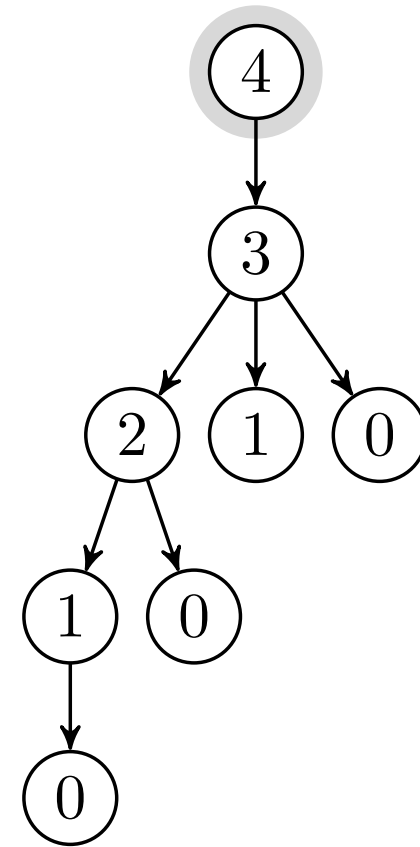



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 

```

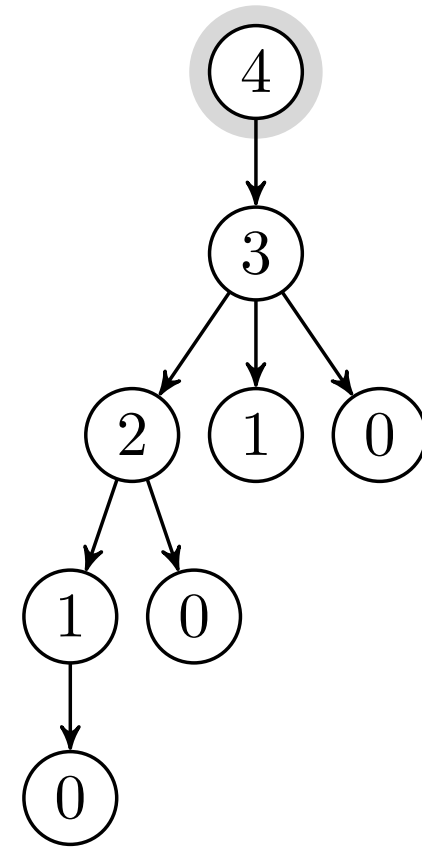
$q, t = -\infty, 9$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6  for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

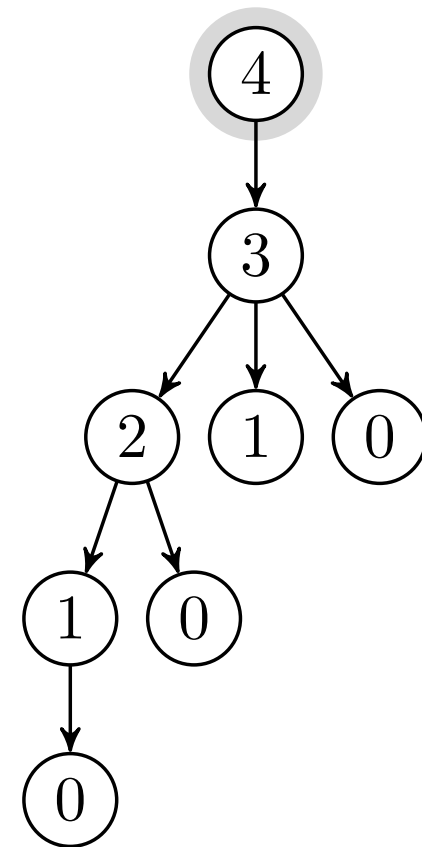
$q, t = 9, 9$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

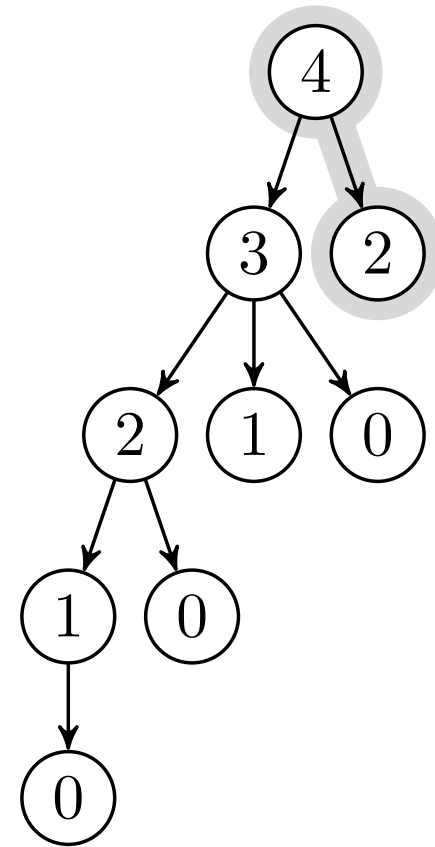
$q, t = 9, 9$



AUX(p, n, r)

```

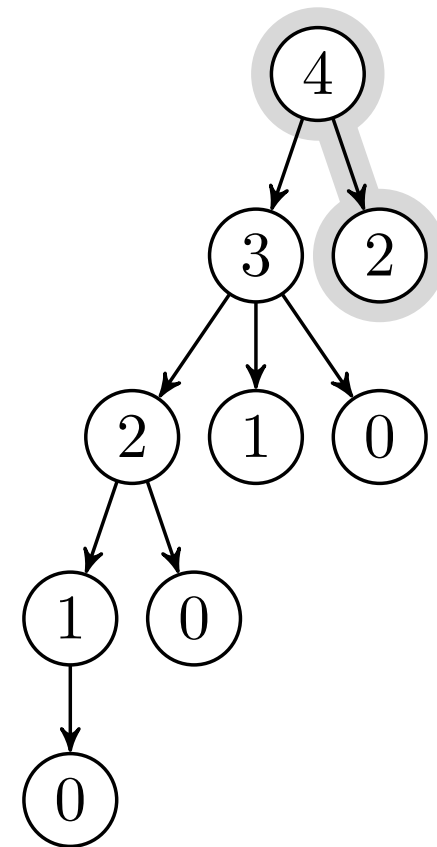
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```



$q, t = 9, 9 \text{ › } -, -$

```

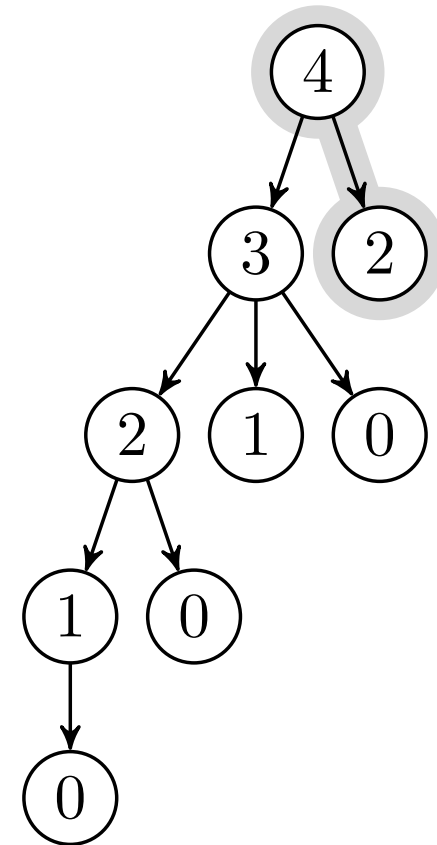
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2  return  $r[n]$ 
3  if  $n == 0$ 
4     $q = 0$ 
5  else  $q = -\infty$ 
6    for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```



$q, t = 9, 9 \text{ › } -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 5
    
```

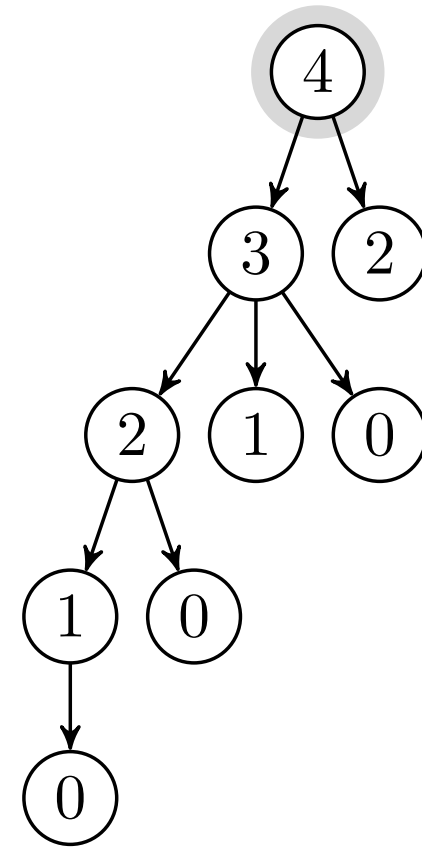


$q, t = 9, 9 \text{ › } -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

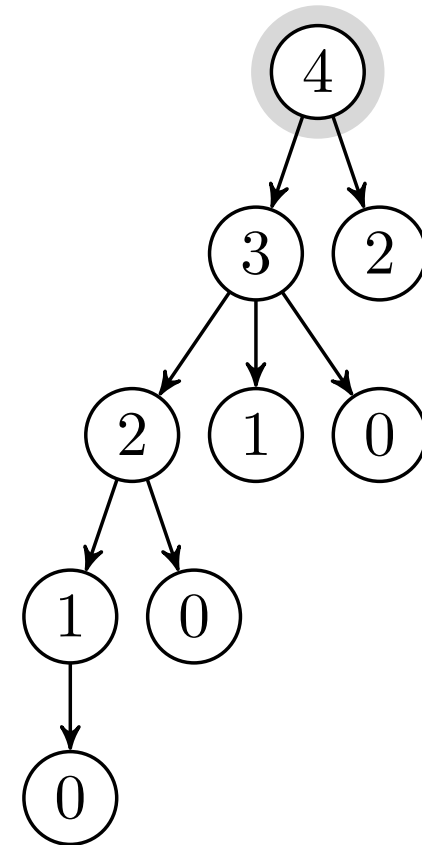
$q, t = 9, 10$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6  for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

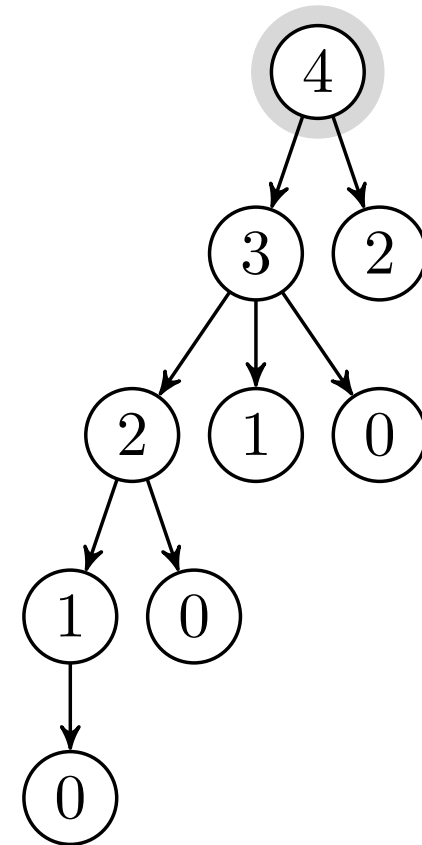
$q, t = 10, 10$




```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

$q, t = 10, 10$

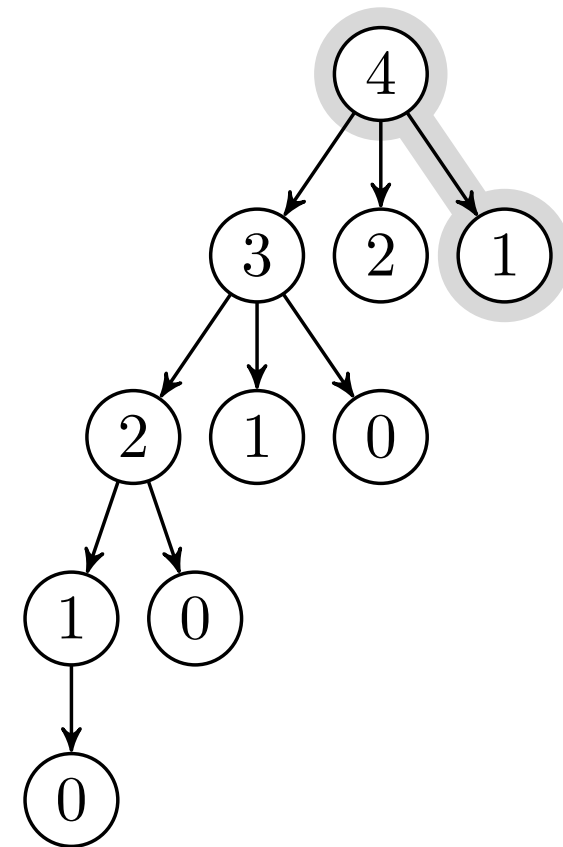


AUX(p, n, r)

```

1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 

```

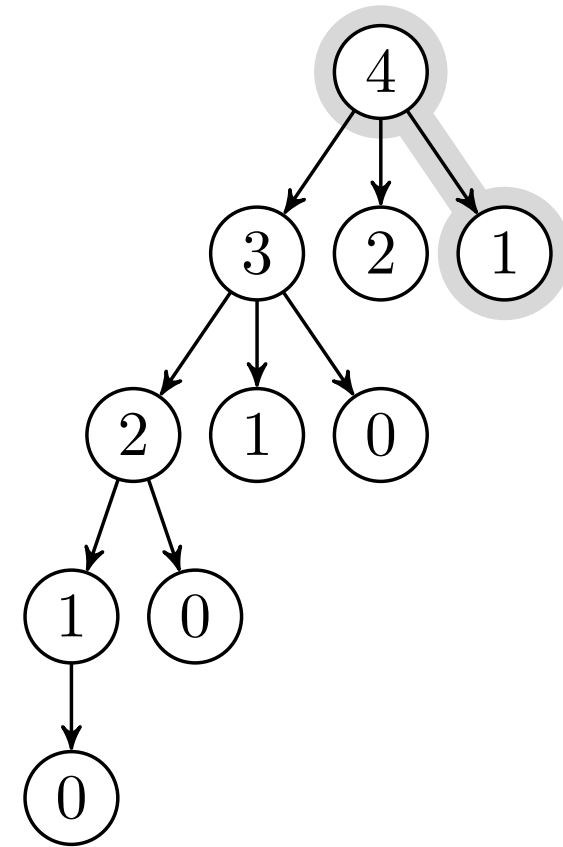


$q, t = 10, 10 \gg -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2  return  $r[n]$ 
3  if  $n == 0$ 
4     $q = 0$ 
5  else  $q = -\infty$ 
6    for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 

```

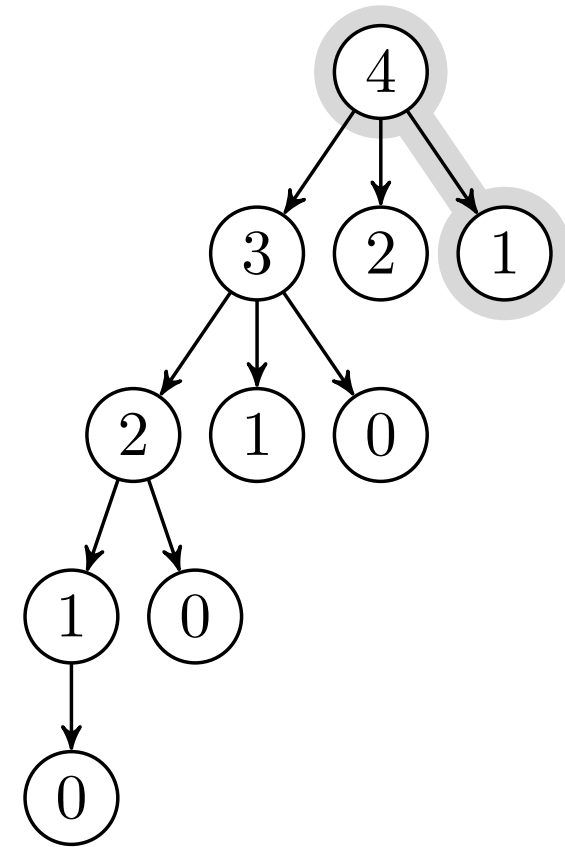


$q, t = 10, 10 \text{ › } -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 1
    
```

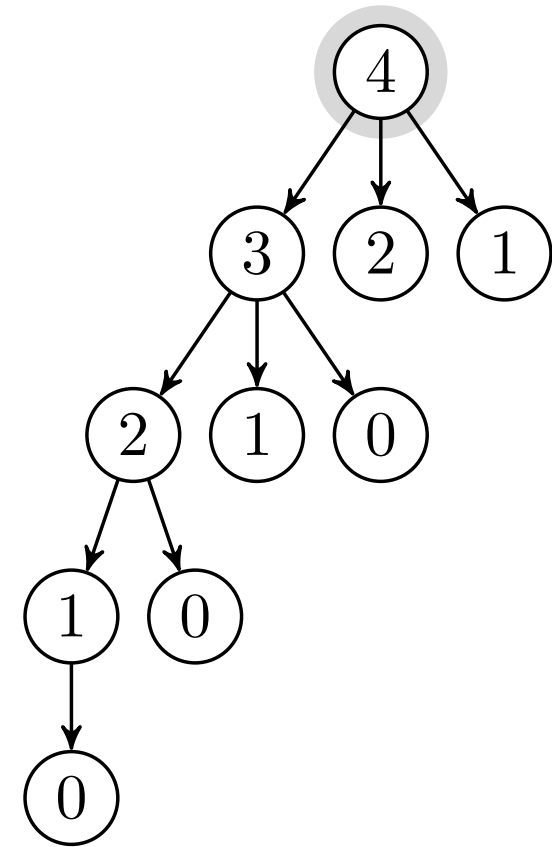
$q, t = 10, 10 \triangleright -, -$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

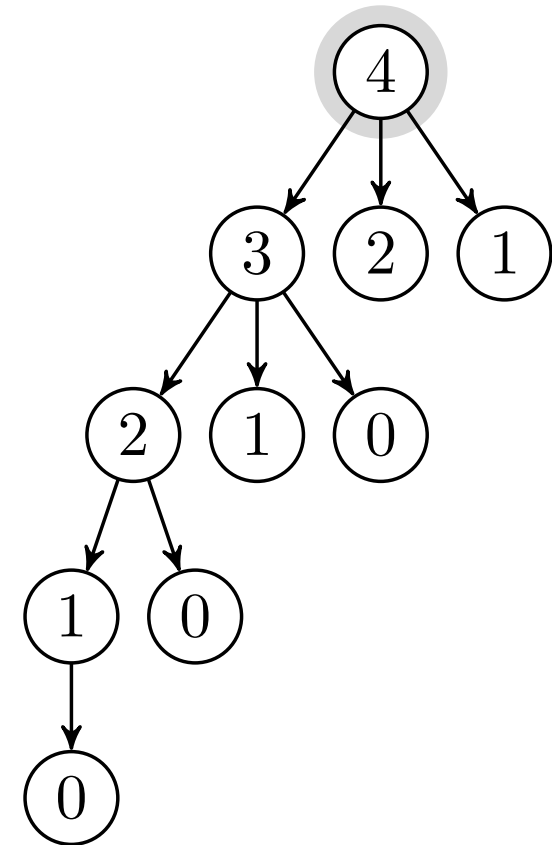
$q, t = 10, 9$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6  for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

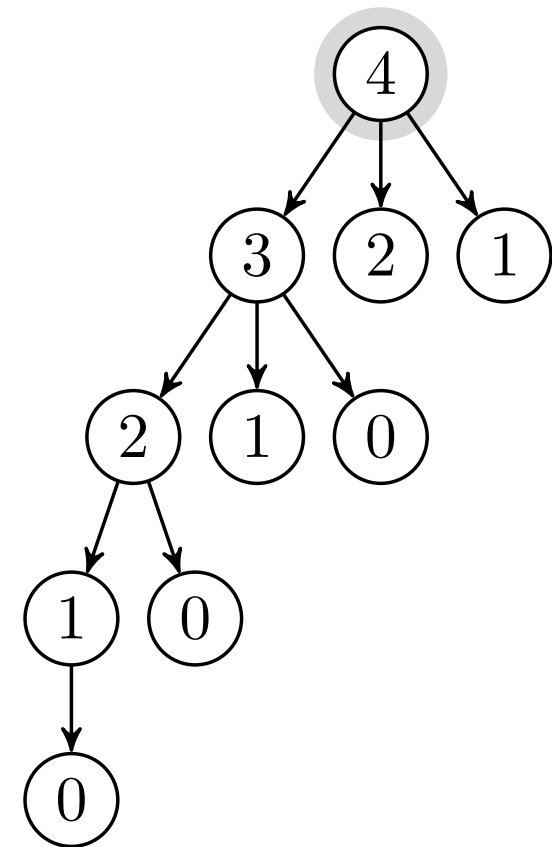
$q, t = 10, 9$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

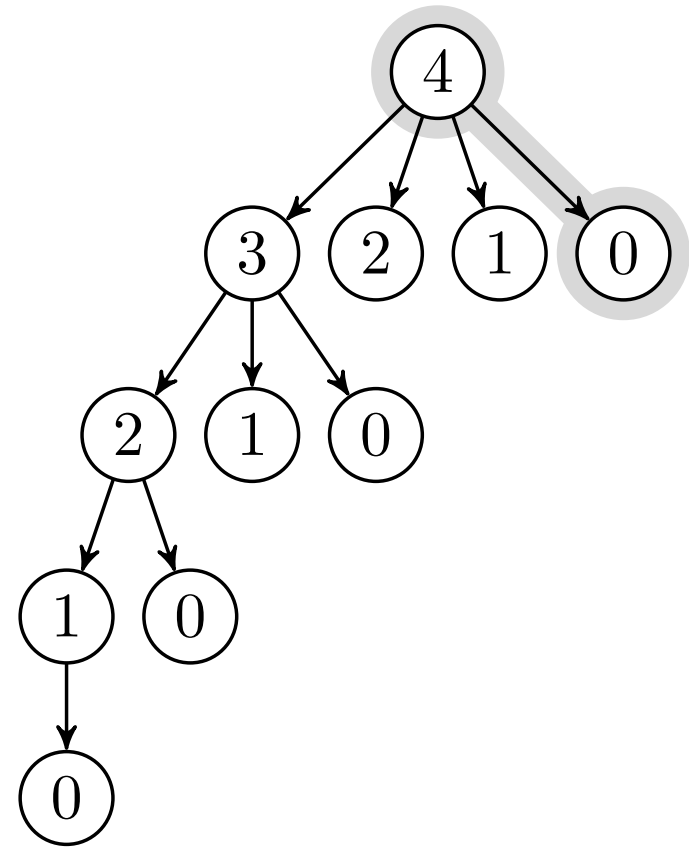
$q, t = 10, 9$



AUX(p, n, r)

```

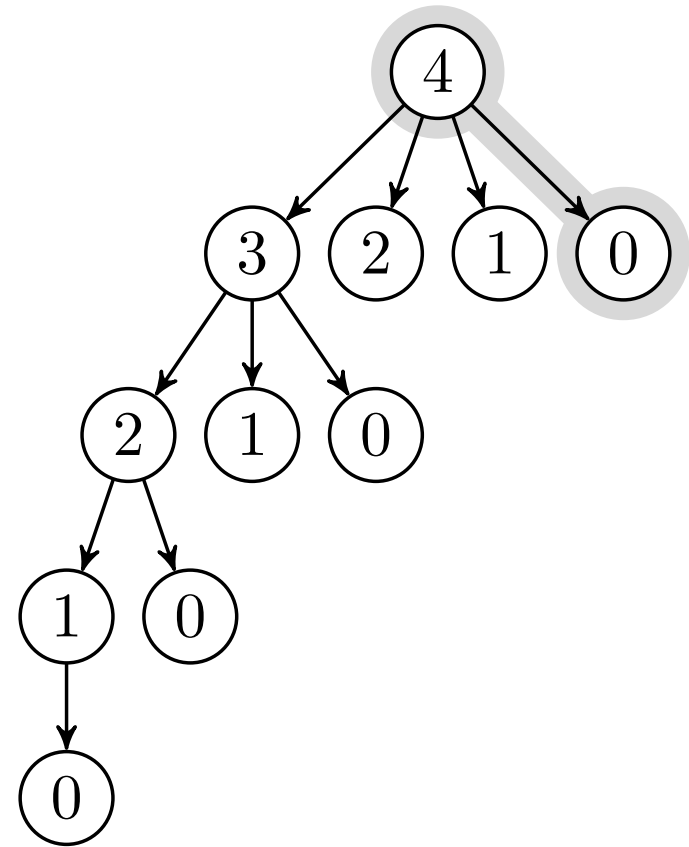
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```



$q, t = 10, 9 \text{ } \text{›} \text{ } -, -$


```

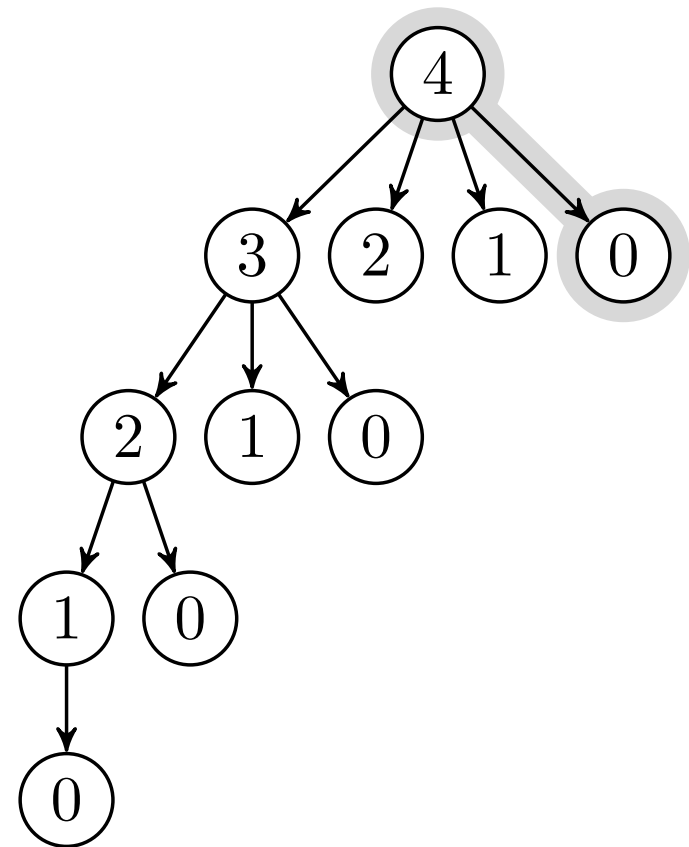
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2  return  $r[n]$ 
3  if  $n == 0$ 
4     $q = 0$ 
5  else  $q = -\infty$ 
6    for  $i = 1$  to  $n$ 
7       $t = p[i] + \text{AUX}(p, n - i, r)$ 
8       $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```



$q, t = 10, 9 \succ -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 0
    
```

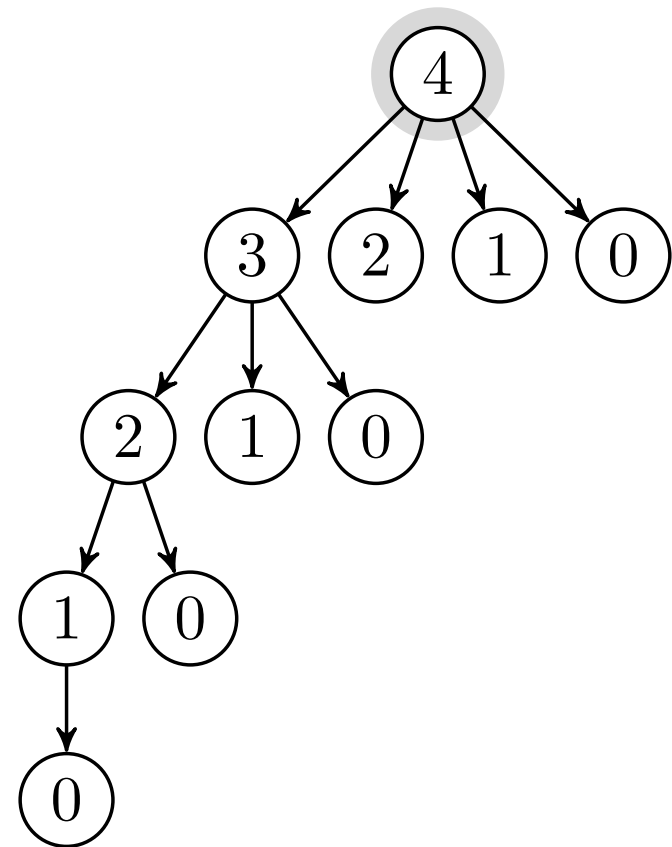


$q, t = 10, 9 \text{ › } -, -$

```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

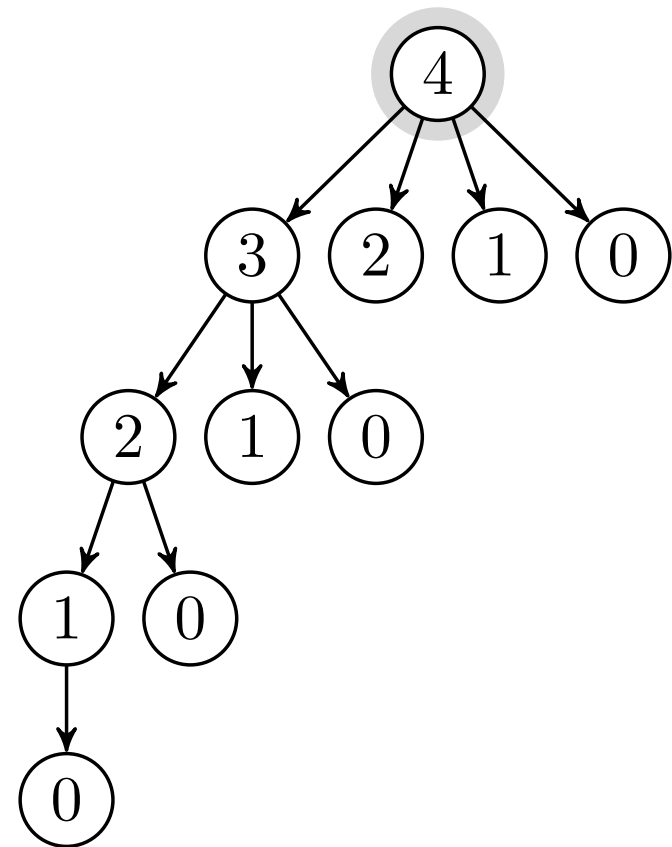
$q, t = 10, 9$



```

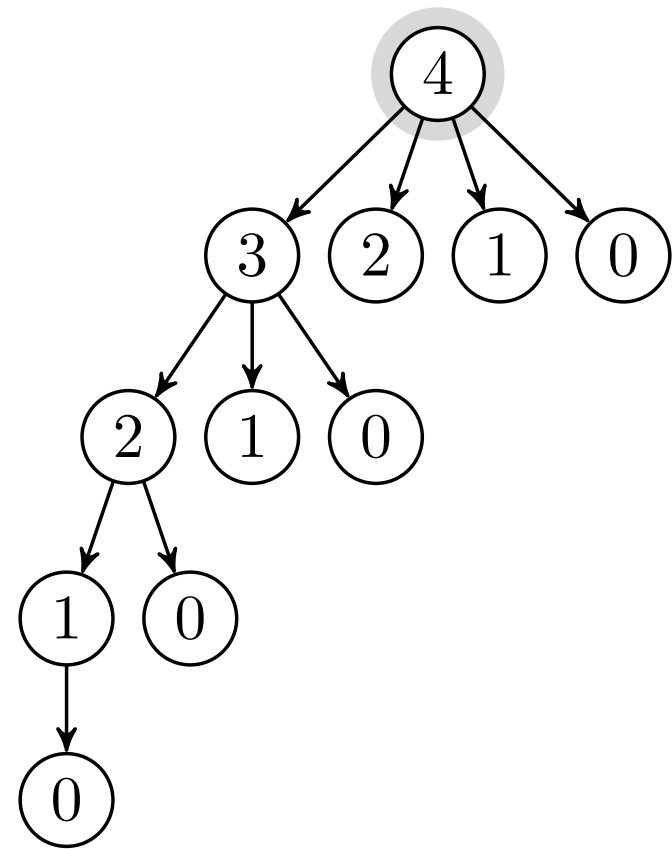
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

$q, t = 10, 9$



```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
    
```

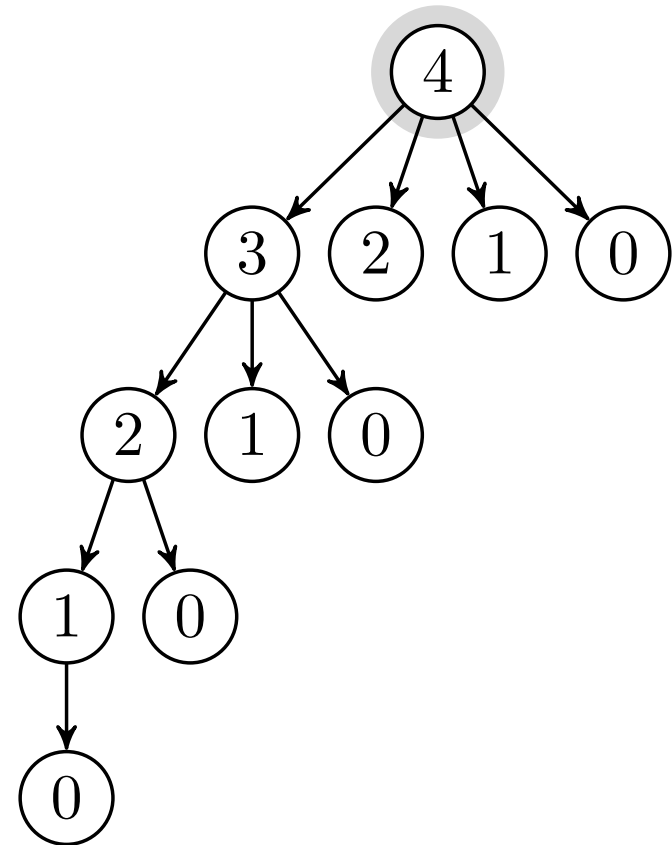


$q, t = 10, 9$

```

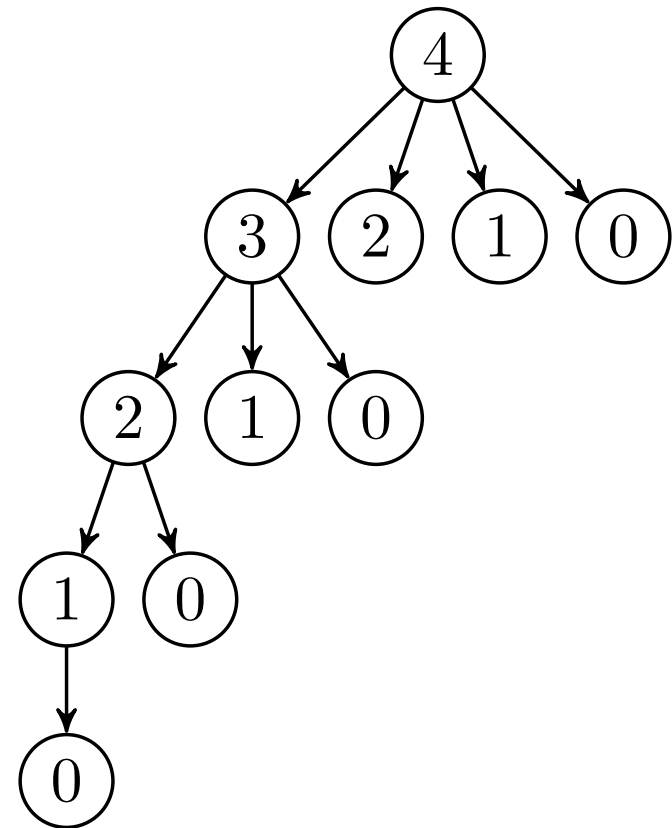
AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 10
    
```

$q, t = 10, 9$



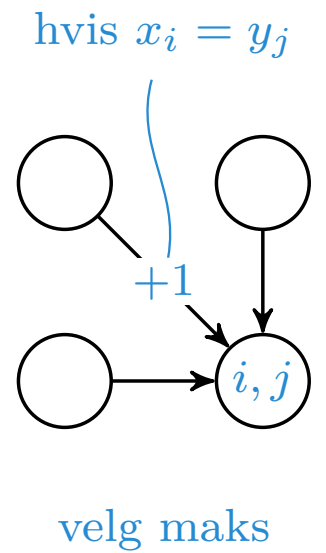
```

AUX( $p, n, r$ )
1  if  $r[n] \geq 0$ 
2      return  $r[n]$ 
3  if  $n == 0$ 
4       $q = 0$ 
5  else  $q = -\infty$ 
6      for  $i = 1$  to  $n$ 
7           $t = p[i] + \text{AUX}(p, n - i, r)$ 
8           $q = \max(q, t)$ 
9   $r[n] = q$ 
10 return  $q$ 
→ 10
    
```



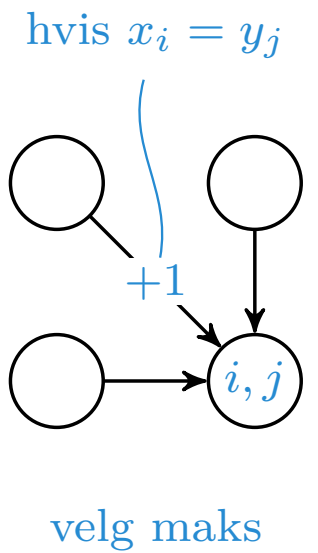
Alternativt LCS- eksempel

		Y									
		s	t	o	r	m	k	a	s	t	
		0	1	2	3	4	5	6	7	8	9
X	0	0	0	0	0	0	0	0	0	0	0
	a	1	0								
	t	2	0								
	o	3	0								
	m	4	0								
	m	5	0								
	a	6	0								
	k	7	0								
	t	8	0								



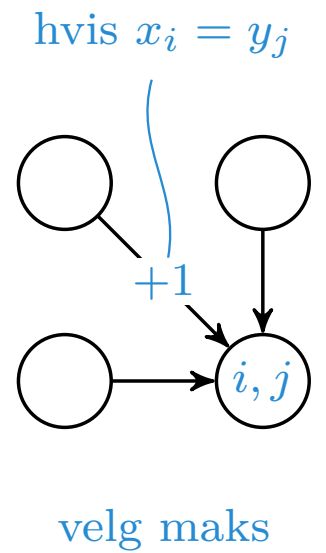
Skal vi hoppe over x_i og/eller y_j ?

		Y									
		s	t	o	r	m	k	a	s	t	
		0	1	2	3	4	5	6	7	8	9
X	0	0	0	0	0	0	0	0	0	0	0
	a	1	0	0							
	t	2	0								
	o	3	0								
	m	4	0								
	m	5	0								
	a	6	0								
	k	7	0								
	t	8	0								



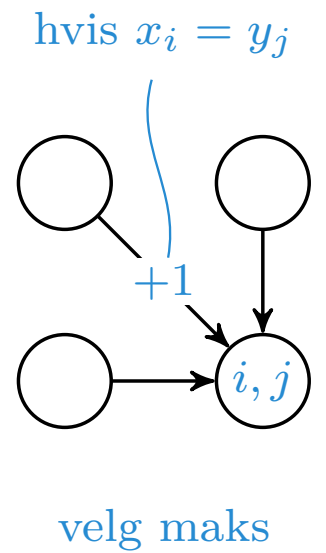
Skal vi hoppe over x_i og/eller y_j ?

		Y										
		s	t	o	r	m	k	a	s	t		
		0	1	2	3	4	5	6	7	8	9	
X	a	0	0	0	0	0	0	0	0	0	0	0
	t	1	0	0	0	0	0	0				
	o	2	0									
	m	3	0									
	m	4	0									
	a	5	0									
	k	6	0									
	t	7	0									
		8	0									



Skal vi hoppe over x_i og/eller y_j ?

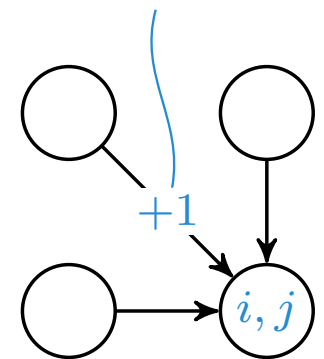
		Y										
		s	t	o	r	m	k	a	s	t		
		0	1	2	3	4	5	6	7	8	9	
X	a	0	0	0	0	0	0	0	0	0	0	0
	t	1	0	0	0	0	0	0	0	1		
	o	2	0									
	m	3	0									
	m	4	0									
	a	5	0									
	k	6	0									
	t	7	0									
		8	0									



Skal vi hoppe over x_i og/eller y_j ?

		Y									
		s	t	o	r	m	k	a	s	t	
		0	1	2	3	4	5	6	7	8	9
X	a	0	0	0	0	0	0	0	0	0	0
	t	1	0	0	0	0	0	0	1	1	1
	o	2	0								
	m	3	0								
	m	4	0								
	a	5	0								
	k	6	0								
	t	7	0								
		8	0								

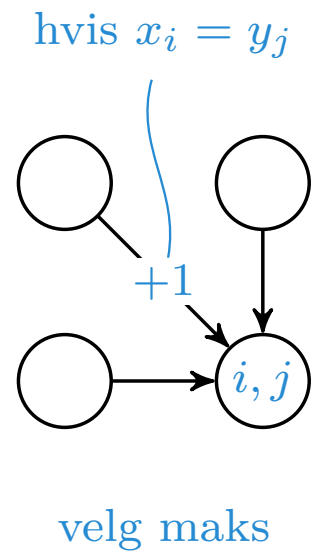
hvis $x_i = y_j$



velg maks

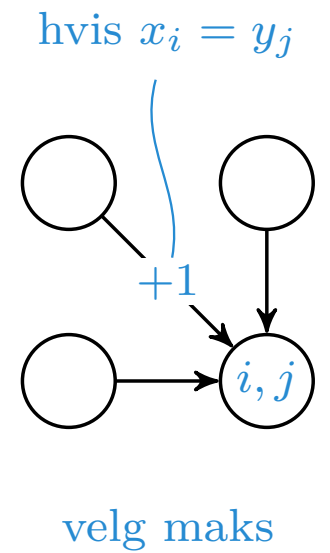
Skal vi hoppe over x_i og/eller y_j ?

		Y									
		s	t	o	r	m	k	a	s	t	
		0	1	2	3	4	5	6	7	8	9
X	0	0	0	0	0	0	0	0	0	0	0
	a	1	0	0	0	0	0	0	1	1	1
	t	2	0	0	1						
	o	3	0								
	m	4	0								
	m	5	0								
	a	6	0								
	k	7	0								
	t	8	0								



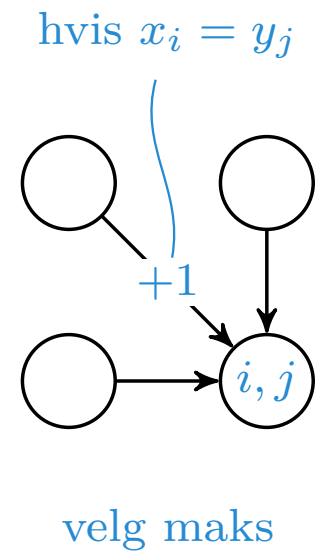
Skal vi hoppe over x_i og/eller y_j ?

		Y									
		s	t	o	r	m	k	a	s	t	
		0	1	2	3	4	5	6	7	8	9
X	0	0	0	0	0	0	0	0	0	0	0
	a	1	0	0	0	0	0	0	1	1	1
	t	2	0	0	1	1	1	1	1	1	2
	o	3	0								
	m	4	0								
	m	5	0								
	a	6	0								
	k	7	0								
	t	8	0								

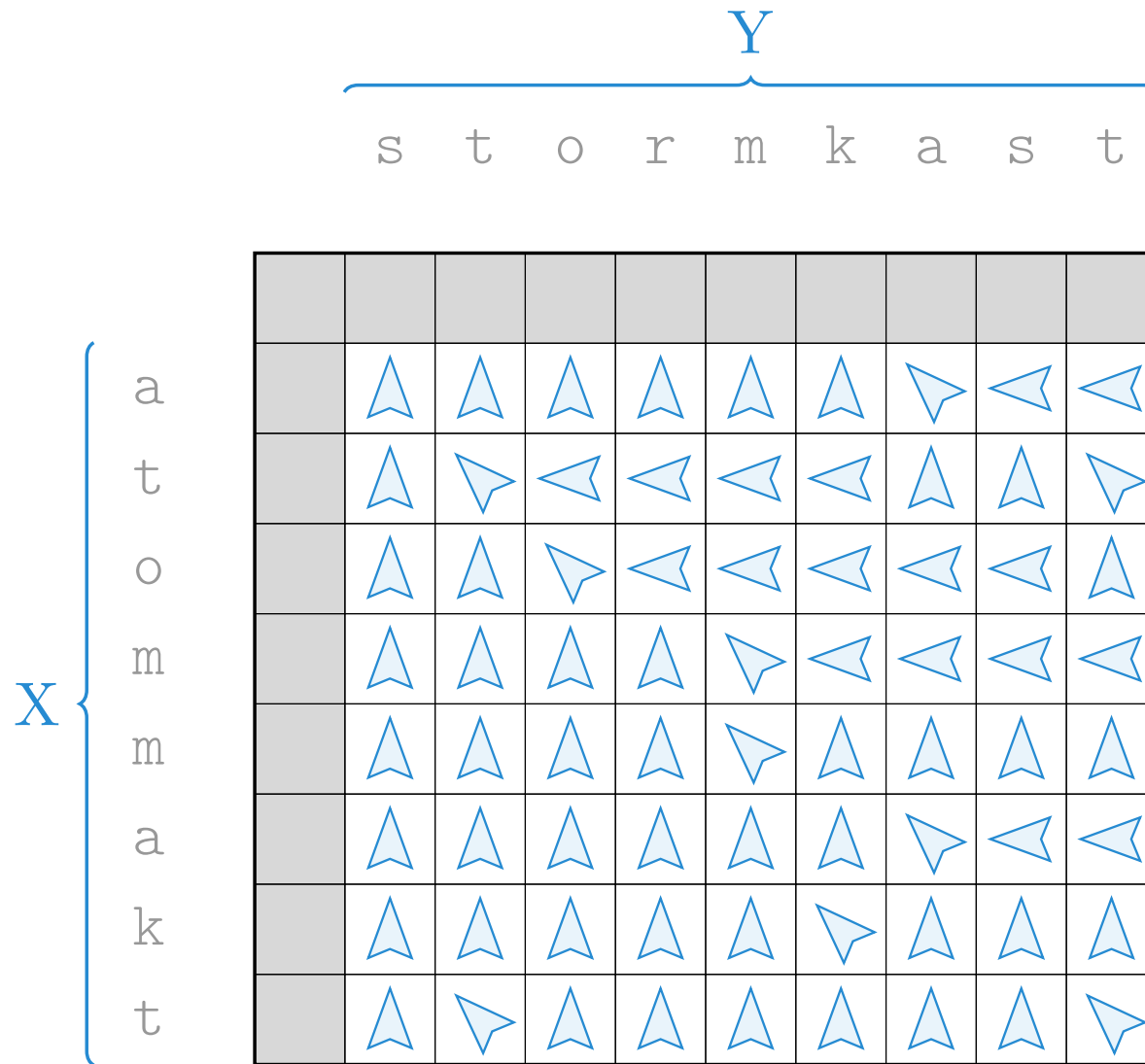


Skal vi hoppe over x_i og/eller y_j ?

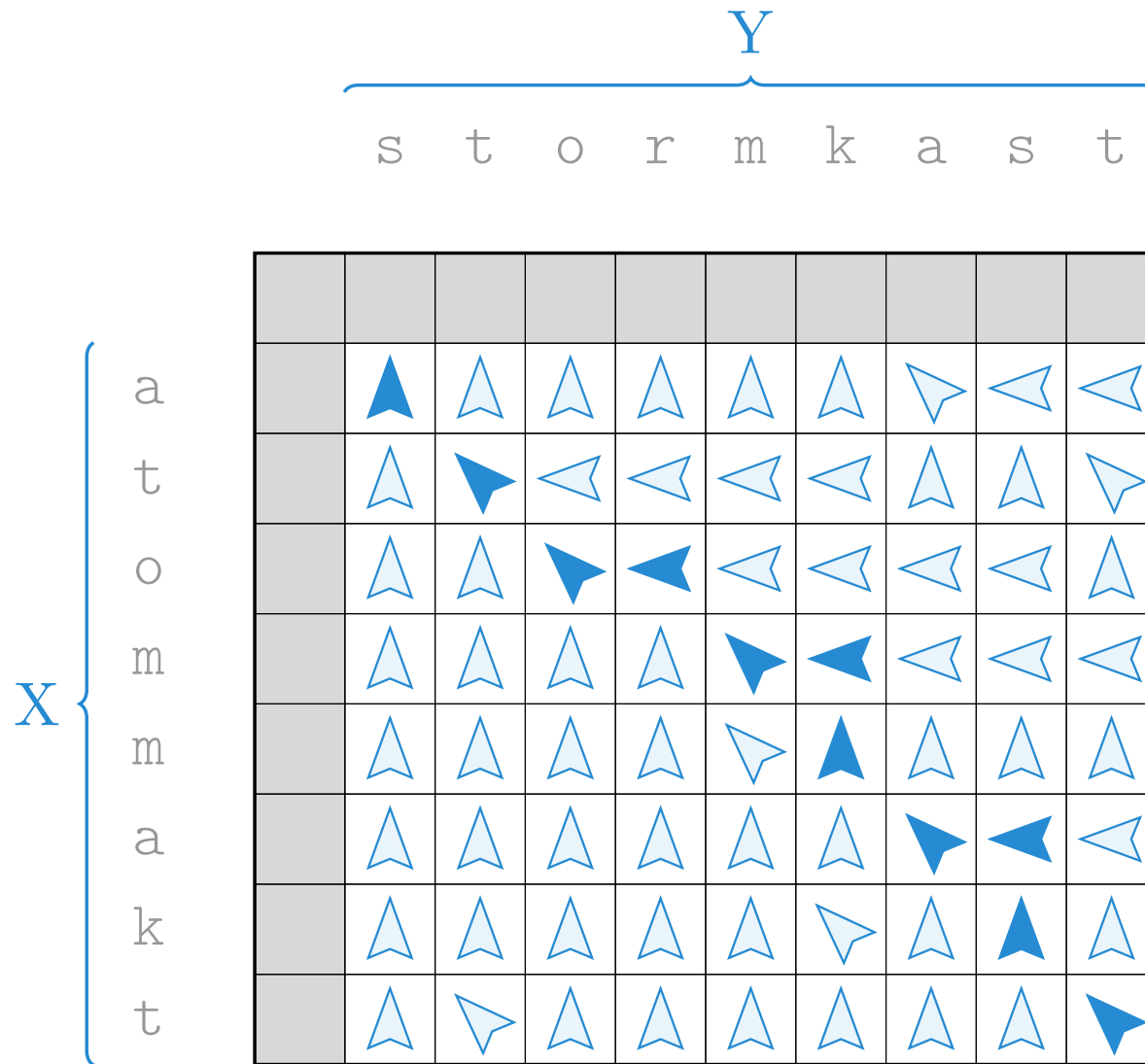
		Y									
		s	t	o	r	m	k	a	s	t	
		0	1	2	3	4	5	6	7	8	9
X	0	0	0	0	0	0	0	0	0	0	0
	a	1	0	0	0	0	0	0	1	1	1
	t	2	0	0	1	1	1	1	1	1	2
	o	3	0	0	1	2	2	2	2	2	2
	m	4	0	0	1	2	2	3	3	3	3
	m	5	0	0	1	2	2	3	3	3	3
	a	6	0	0	1	2	2	3	3	4	4
	k	7	0	0	1	2	2	3	4	4	4
	t	8	0	0	1	2	2	3	4	4	4



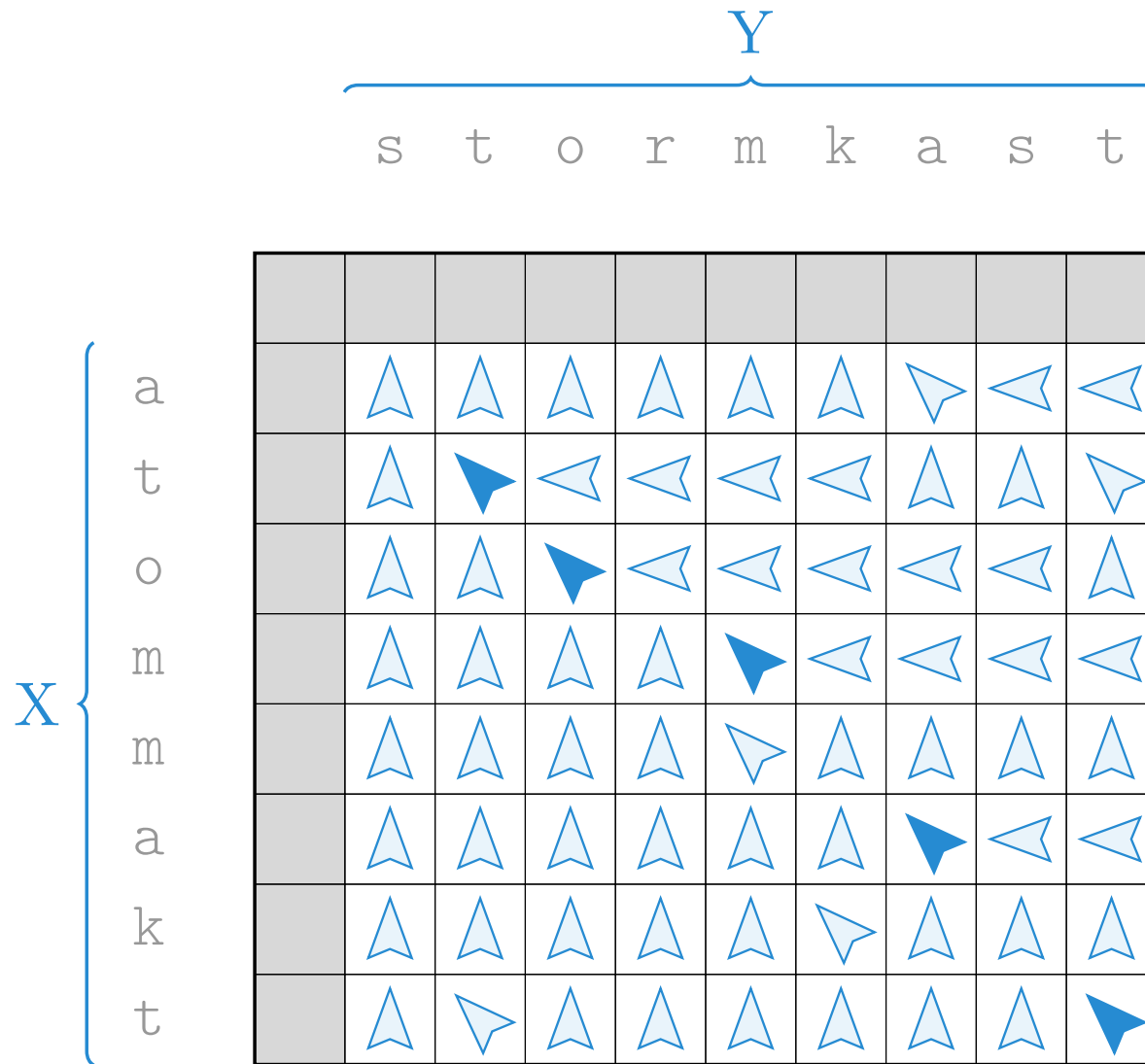
Skal vi hoppe over x_i og/eller y_j ?



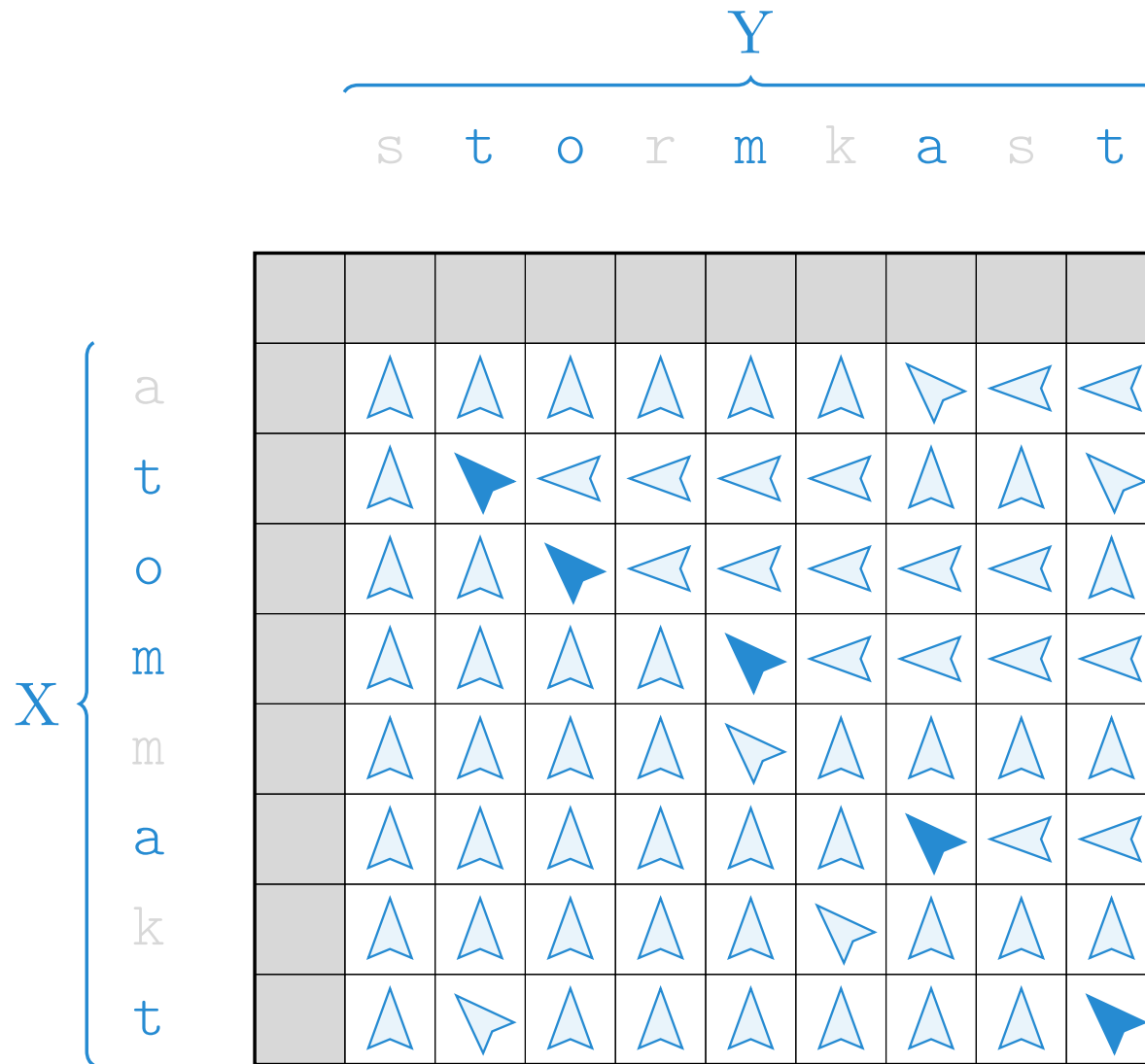
Hvilken delløsning bygger løsning (i, j) på?



Hvilke delløsninger bidro til løsning (n, m) ?



Hvilke elementer hoppet vi ikke over?



Hvilke elementer hoppet vi ikke over?