=> 0/1 Knapsack Problem

n = number of objects
W = Capacity of knapsack
Table = v(1 -- n, 0 -- W) [v[i][j]]

(1) Make v[i][0] = 0 for $0 < i \leq n$
(2) if $j < w_i$ then take $v[i][j] = v[i-1][j]$
(3) if $j \geq w_i$ then take $v[i][j] =$
$\max(v[i-1][j], v[i-1][j-w_i] + v_i)$

Example

Item	weight	value
1	1	1
2	2	6
3	5	18
4	6	22
5	7	28

		j →	0	1	2	3	4	5	6	7	8	9	10	11
		↓i												
		0	0	0	0	0	0	0	0	0	0	0	0	0
$w_1=1$	$v_1=1$	1	0	1	1	1	1	1	1	1	1	1	1	1
$w_2=2$	$v_2=6$	2	0	1	6	7	7	7	7	7	7	7	7	7
$w_3=5$	$v_3=18$	3	0	1	6	7	7	18	19	24	25	25	25	25
$w_4=6$	$v_4=22$	4	0	1	6	7	7	18	22	24	28	29	29	40
$w_5=7$	$v_5=28$	5	0	1	6	7	7	18	22	28	29	34	35	40

→ ~~v[0][j]~~

→ $v[1][1] = \max(v[i-1][j], v[i-1][j-w_i] + v_i)$

$= \max(v[0][1], v[0][0] + v_1)$

$= \max(0, 1+0)$

$= 1$

→ $v[3][1] = $ ~~v[i]~~ $v[i-1][j]$

$= v[2][1]$

$= 1$