Arslan
Turkušić
1787/18173

1.

$W = 10$

Vrsta robe	1	2	3
Težina	2	3	1
Količina	4	3	5
Cijena (c_i)	31	35	20

Postavimo problem

$$\text{max } z = 31x_1 + 35x_2 + 20x_3$$

$$2x_1 + 3x_2 + 1x_3 \leq 10$$

$$0 \leq x_1 \leq 4$$
$$0 \leq x_2 \leq 3$$
$$0 \leq x_3 \leq 5$$

$$x_1, x_2, x_3 \in \mathbb{Z}$$

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$i = 1$
≤ 4
$w = 10$

v	$(x_1, v-2x_1)$	$31x_1 + z(v-2x_1, 0)$	$z(v,1)$
0	(0,0)	0	0
1	(0,1)	0	0
2	(0,2) (1,0)	0, 31	31
3	(0,3), (1,1)	0, 31	31
4	(0,4), (1,2), (2,0)	0, 31, 62	62
5	(0,5), (1,3), (2,1)	0, 31, 62	62
6	(0,6), (1,4), (2,2), (3,0)	0, 31, 62, 93	93
7	(0,7), (1,5), (2,3), (3,1)	0, 31, 62, 93	93
8	(0,8), (1,6), (2,4), (3,2), (4,0)	0, 31, 62, 93, 124	124
9		0, 31, 62, 93, 124	124
10		0, 31, 62, 93, 124	124

(0,0), (1,7)
(2,5), (3,3)
(4,1)

↓

(0,0), (1,8), (2,6)
(3,4), (4,2)

$i = 2$
≤ 3
$w = 10$

v	$(x_2, v-3x_2)$	$35x_2 + z(v-3x_2, 1)$	$z(v,2)$
0	(0,0)	0	0
1	(0,1)	0	0
2	(0,2)	31	31
3	(0,3) (1,0)	31, 35	35
4	(0,4), (1,1)	62, 35	62
5	(0,5), (1,2)	62, 66	66
6	(0,6), (1,3), (2,0)	93, 66, 70	93
7	(0,7), (1,4), (2,1)	93, 97, 70	97
8	(0,8), (1,5), (2,2)	124, 97, 101	124
9	(0,9), (1,6), (2,3), (3,0)	124, 128, 101, 105	128
10	(0,0), (1,7), (2,4), (3,1)	124, 128, 132, 105	132

A. T.
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$i = 3$
≤ 5
$w = 10$

V	$(x_3, V - x_3)$	$20x_3 + z(V - v_3, 2)$	$z(V,3)$
0	(0,0)	0	0
1	(0,1), (1,0)	0, 20	20
2	(0,2), (1,1), (2,0)	31, 20, 40	40
3	(0,3), (1,2), (2,1), (3,0)	35, 51, 40, 60	60
4	(0,4), (1,3), (2,2), (3,1), (4,0)	62, 55, 71, 60, 80	80
5	(0,5), (1,4), (2,3), (3,2), (4,1), (5,0)	66, 82, 75, 91, 80, 100	106
6	(0,6), (1,5), (2,4), (3,3), (4,2), (5,1)	93, 86, 102, 95, 111, 100	111
7	(0,7), (1,6), (2,5), (3,4), (4,3), (5,2)	97, 113, 106, 122, 115, 131	131
8	(0,8), (1,7), (2,6), (3,5), (4,4), (5,3)	124, 117, 133, 126, 142, 135	142
9	(0,9), (1,8), (2,7), (3,6), (4,5), (5,4)	128, 144, 137, 153, 146, 162	162
10	(0,10), (1,9), (2,8), (3,7), (4,6), (5,5)	132, 148, 168, 157, 173, 166	173

$Z = 173$

$i = 3$, $v = 10$ } maksimum postignut za $x_3 = 4$

kapacitet $= 6$ $(V - w_3 x_3 = 10 - 1 \cdot 4)$

$i = 2$, $v = 6$ } -"- $x_2 = 0$

kapacitet $= 6$

$i = 1$, $v = 6$ } $x_1 = 3 \Rightarrow 6 - 3 \cdot 2 - 6 - 6 = 0$

Popunili smo vanoc

$x_1 = 3$, $x_2 = 0$, $x_3 = 4$

$x_1 w_1 = 6$, $x_3 w_3 = 4$ } neće doći do promjene u profitu