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164151 2290

16 41 51 22 90

	1	2	3	4	5
p	16	41	51	22	90
w	8	13	12	15	20

$M = 45$

find $(x_1, x_2, x_3, x_4, x_5)$ as $\sum x_i w_i \leq M$ and $\max \sum x_i p_i$

	1	2	3	4	5
p	16	41	51	22	90
w	8	13	12	15	20
p/w	2	3.16	4.25	1.47	4.5

$M = 45$

Sort p_i/w_i (high → low) choose high frist

i	5	3	2	1	4
W	20	12	13	8	15
M	45	45 − 20 = 25	25 − 12 = 13	0	0
Condition	20 < M	12 < M	13 = M	—	—
x	1	1	1	0	0

$(x_1, x_2, x_3, x_4, x_5)$

0, 1, 1, 0, 1 $\sum x_i p_i = 0(16) + 1(41) + 1(51) + 0(22) + 1(90) = 198$ #