03.02 Д/З

№ 2

$Max: W = 15y_1 + 10y_2 + 18y_3 + 14y_4$

$2y_1 + y_2 + 3y_3 + y_4 \le 9$

$y_1 + 3y_2 + 2y_3 + y_4 \le 7$

$y_1 + 2y_2 + y_3 + 4y_4 \le 6$

$y_1 + 4y_2 + 5y_3 + 2y_4 \le 5$

$2y_1 + y_2 + 3y_3 + y_4 + y_5 = 9$

$y_1 + 3y_2 + 2y_3 + y_4 + y_6 = 7$

$y_1 + 2y_2 + y_3 + 4y_4 + y_7 = 6$

$y_1 + 4y_2 + 5y_3 + 2y_4 + y_8 = 5$

$y_{1\dots8} \ge 0$

Б	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	b
y_5	2	1	3	1	1	0	0	0	9
y_6	1	3	2	1	0	1	0	0	7
y_7	1	2	1	4	0	0	1	0	6
y_8	1	4	5	2	0	0	0	1	5
Z	-15	-10	-18	-14	0	0	0	0	0

Б	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	b
y_5	1	-1	0	-1/4	5/4	0	0	-3/4	30/4
y_6	0	2	0	2/4	-3/4	1	0	-1/4	17/4
y_7	0	2	0	26/4	-6/4	0	1	1/4	11/4
y_8	0	1	1	3/4	-1/4	0	0	2/4	1/4
Z	0	-7	0	-59/4	57/4	0	0	-9/4	468/4

Б	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	b
y_5	1/5	-1/5	0	-1/5	1	0	0	-3/5	6
y_6	3/5	7/5	0	1/5	0	1	0	-2/5	5
y_7	6/5	6/5	0	18/5	0	0	1	-1/5	5
y_8	1/5	4/5	1	2/5	0	0	0	1/5	1
Z	-57/5	22/5	0	-34/5	0	0	0	18/5	18

Б	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	b
y_5	1	-2/3	1/3	0	2/3	0	0	-1/3	13/3
y_6	0	4/3	-2/3	0	-1/3	1	0	-1/3	5/3
y_7	0	-20/3	-26/3	0	-2/3	0	1	-7/3	1/3
y_8	0	4/3	7/3	1	-1/3	0	0	2/3	1/3
Z	0	38/3	59/3	0	16/3	0	0	13/3	209/3

$y_1 = 13/3 \quad y_2 = 0$

$y_4 = 1/3 \quad y_3 = 0$

$Z = 5 \cdot 13 + 4 \cdot 2/3 = 69\,2/3$

$B-p6: (y_1, y_2, y_3, y_4) = (13/3, 0, 0, 1/3) \quad Z = 69\,2/3$

№ 3

$Max: W = 20y_1 + 16y_2 + 12y_3 + 18y_4$

$3y_1 + y_2 + 2y_3 + y_4 \le 10$

$2y_1 + 4y_2 + 3y_3 + y_4 \le 6$

$y_1 + 3y_2 + 5y_3 + 2y_4 \le 7$

$y_1 + 2y_2 + y_3 + 4y_4 \le 8$

$\Rightarrow$

$3y_1 + y_2 + 2y_3 + y_4 + y_5 = 10$

$2y_1 + 4y_2 + 3y_3 + y_4 + y_6 = 6$

$y_1 + 3y_2 + 5y_3 + 2y_4 + y_7 = 7$

$y_1 + 2y_2 + y_3 + 4y_4 + y_8 = 8$

Б	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	b
y_5	3	1	2	1	1	0	0	0	10
y_6	2	4	3	1	0	1	0	0	6
y_7	1	3	5	2	0	0	1	0	4
y_8	1	2	1	4	0	0	0	1	8
Z	-20	-16	-12	-18	0	0	0	0	0

Б	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	b
y_5	0	-5	-5/2	-1/2	1	-3/2	0	0	1
y_6	1	2	3/2	1/2	0	1/2	0	0	3
y_7	0	1	7/2	3/2	0	-1/2	1	0	4
y_8	0	0	-1/2	7/2	0	-1/2	0	1	5
Z	0	24	18	-8	0	10	0	0	60

Б	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	b
y_5	0	-5	-18/7	0	1	-11/7	0	1/7	12/7
y_6	1	2	11/7	0	0	4/7	0	-1/7	16/7
y_7	0	1	26/7	0	0	-2/7	1	-3/7	13/7
y_8	0	0	-1/7	1	0	-1/7	0	2/7	10/7
Z	0	24	110/7	0	0	62/7	0	16/7	500/7

$y_1 = 16/7 \quad y_2 = 0 \quad y_3 = 0 \quad y_4 = 10/7 \quad Z = \frac{20 \cdot 16}{7} + \frac{180}{7} = 500/7$

Отв: $(y_1, y_2, y_3, y_4) = (16/7, 0, 0, 10/7) \quad Z = 500/7$.