

## OR 과제 - 5

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## 6.3-1

$$\begin{array}{ll}\text{Minimize} & W = 20y_1 + 10y_2 \\ \text{Subject to} & 5y_1 + y_2 \geq 6 \\ & 2y_1 + 2y_2 \geq 8 \\ & y_1, y_2 \geq 0\end{array}$$

## 6.3-5

$$\begin{array}{ll}\text{Minimize} & W = 10y_1 \\ \text{Subject to} & y_1 \geq 3 \\ & -2y_1 \geq -8 \quad (\Rightarrow y_1 \leq 4) \\ & y_1 \geq 0\end{array}$$

- 최적해:  $y_1 = 3 \Rightarrow W = 30, x_1 = 10, x_2 = 0 \Rightarrow Z = 30$

## 6.3-9

$$\begin{array}{ll}\text{Minimize} & W = 15y_1 + 25y_2 \\ \text{Subject to} & y_1 \geq 5 \\ & y_2 \geq 4 \\ & y_1 + 2y_2 \geq 3 \\ & y_1, y_2 \geq 0\end{array}$$

- 최적해:  $y_1 = 5, y_2 = 4 \Rightarrow W = 175$

## 6.4-1

$$\begin{array}{ll}\text{Minimize} & W = 10y_1 + 20y_2 \\ \text{Subject to} & 2y_1 + y_2 = 5 \\ & 3y_1 + 2y_2 \geq 4 \\ & y_1 \leq 0, \quad y_2 \text{ 자유변수}\end{array}$$

## 6.4-4

$$\text{Maximize } W = 4y_1 + 10y_2$$

$$\text{Subject to } -4y_1 + 5y_2 \leq 5$$

$$2y_1 - 10y_2 \leq 10$$

$$y_1, y_2 \geq 0$$

- 쌍대문제 불가능  $\rightarrow$  원문제 무한해

## 6.4-10

Basic	$Z$	$x_1$	$x_2$	RHS
$Z$	1	0	0	20
$x_1$	0	1	0	5
$x_2$	0	0	1	3