

$$-\text{Maximize } Z_1^2 = -\circ/\delta x_1 - 2/\delta x_2$$

$$s.t. \ 1/\delta x_1 + 4/\delta x_2 \leq 19/\delta$$

$$2x_1 + \delta x_2 \leq 2\circ$$

$$2/\delta x_1 + \delta/\delta x_2 \leq 2\circ/\delta$$

$$\circ/\delta x_1 + 2/\delta x_2 \geq 2/\delta$$

$$x_1 + 3x_2 \geq 3$$

$$1/\delta x_1 + 3/\delta x_2 \geq 3/\delta \quad (2.\circ)$$

$$2/\delta x_1 + \circ/\delta x_2 \leq 2\circ/\delta$$

$$3x_1 + x_2 \leq 3\circ$$

$$3/\delta x_1 + 1/\delta x_2 \leq 3\circ/\delta$$

$$\rightarrow 1/\delta x_1 + \circ/\delta x_2 \geq 11$$

$$\rightarrow 2x_1 + x_2 \geq 1\delta$$

$$\rightarrow 2/\delta x_1 + 1/\delta x_2 \geq 19$$

$$x_1, x_2 \geq \circ$$

$$x_1^* = 5/\delta, \quad x_2^* = \circ$$

$$Z_1^{*2} = 3/9$$

$$-\text{Maximize } Z_2^2 = -x_1 - 3x_2$$

$$s.t. \ 1/\delta x_1 + 4/\delta x_2 \leq 19/\delta$$

$$2x_1 + \delta x_2 \leq 2\circ$$

$$2/\delta x_1 + \delta/\delta x_2 \leq 2\circ/\delta$$

$$\circ/\delta x_1 + 2/\delta x_2 \geq 2/\delta$$

$$x_1 + 3x_2 \geq 3$$

$$1/\delta x_1 + 3/\delta x_2 \geq 3/\delta \quad (1.\circ)$$

$$2/\delta x_1 + \circ/\delta x_2 \leq 2\circ/\delta$$

$$3x_1 + x_2 \leq 3\circ$$

$$3/\delta x_1 + 1/\delta x_2 \leq 3\circ/\delta$$

$$\rightarrow 1/\delta x_1 + \circ/\delta x_2 \geq 11$$

$$\rightarrow 2x_1 + x_2 \geq 1\delta$$

$$\rightarrow 2/\delta x_1 + 1/\delta x_2 \geq 19$$

$$x_1, x_2 \geq \circ$$

$$x_1^* = 5/\delta, \quad x_2^* = \circ$$

$$Z_2^{*2} = 5/\delta$$