

$X_1$  = number of Trucks manufactured

$X_2$  = " Automobiles "

$X_3$  = " Vans "

$$\text{min } Z = -6x_1 - 4x_2 - 3x_3 \quad (*1000\$)$$

$$4x_1 + 5x_2 + 3x_3 + x_4 = 12$$

$$3x_1 + 4x_2 + 2x_3 + x_5 = 10$$

$$4x_1 + 2x_2 + x_3 + x_6 = 8$$

$$x_4, x_5, x_6, x_1, x_2, x_3 \geq 0$$

$$\text{min } Z = -6x_1 - 4x_2 - 3x_3 \quad (*1000\text{L})$$

$$4x_1 + 5x_2 + 3x_3 + x_4 = 12$$

$$3x_1 + 4x_2 + 2x_3 + x_5 = 10$$

$$4x_1 + 2x_2 + x_3 + x_6 = 8$$

$$x_4, x_5, x_6, x_1, x_2, x_3 \geq 0$$

B V	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$	$x_6$	RHS	RATIOS
Z	6	4	3	0	0	0	0	
$x_4$	4	5	3	1	0	0	12	$12/4 = 3$
$x_5$	3	4	2	0	1	0	10	$10/3 = 3.\bar{3}$
$\rightarrow x_6$	4	2	1	0	0	1	8	$8/4 = 2$

Z	0	1	$3/2$	0	0	$-3/2$	-12	
$x_4$	0	3	2	1	0	-1	4	$4/2 = 2$
$x_5$	0	$5/2$	$5/4$	0	1	$-3/4$	4	$4/(5/4) = \frac{16}{5}$
$x_1$	1	$1/2$	$1/4$	0	0	$1/4$	2	$2/(1/4) = 8$

BV	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$	$x_6$	RHS
Z	0	1	$3/2$	0	0	$-3/2$	-12
$x_4$	0	3	<u>2</u>	1	0	-1	4
$x_5$	0	$5/2$	$5/4$	0	1	$-3/4$	4
$x_1$	1	$1/2$	$1/4$	0	0	$1/4$	2

Z	0	<u><math>-5/4</math></u>	0	<u><math>-3/4</math></u>	0	<u><math>-3/4</math></u>	-15
$x_3$	0	$3/2$	1	$1/2$	0	$-1/2$	2
$x_5$		$\vdots$		$\vdots$			$3/2$
$x_1$		$\vdots$		$\vdots$			$3/2$

$+ \frac{5}{4}x_2 + \frac{3}{4}x_4 + \frac{3}{4}x_6$

$$x^* = (x_1^*, x_2^*, x_3^*, x_4^*, x_5^*, x_6^*) = (3/2, 0, 2, 0, 3/2, 0)$$

$$z^* = -15$$

$$\underline{y^*} = 15, \text{ } \infty \text{ } \&$$