

M-TECHNIQUE (CONTD.)

TABLEAU 1

	BASIC	x_1	x_2	s_2	R_1	R_2	s_3	SOLUTION	RATIO
	Z		$-4+7M$	$-1+4M$	$-M$	0	0	0	9M
x_1 ENTERS R_1 LEAVES	R_1	3	1	0	1	0	0	3	$\frac{3}{3} = 1$
	R_2	4	3	-1	0	1	0	6	$\frac{6}{4} = 1.5$
	s_3	1	2	0	0	0	1	4	$\frac{4}{1} = 4$

NOTE: MINIMIZATION; HENCE HIGHEST +ve COMES IN

TABLEAU 2

	BASIC	x_1	x_2	s_2	R_1	R_2	s_3	SOLUTION	RATIO
	Z		0	$(1+5M)/3$	$-M$	$(4-7M)/3$	0	0	$4+2M$
x_2 ENTERS R_2 LEAVES	x_1	1	$1/3$	0	$1/3$	0	0	1	$\frac{1}{1/3} = 3$
	R_2	0	$5/3$	-1	$-4/3$	1	0	2	$\frac{2}{5/3} = \frac{6}{5}$
	s_3	0	$5/3$	0	$-1/3$	0	1	3	$\frac{3}{5/3} = \frac{9}{5}$

TABLEAU 3

	BASIC	x_1	x_2	s_2	R_1	R_2	s_3	SOLUTION	RATIO
	Z		0	0	$1/5$	$(8/5)-M$	$-(1/5)-M$	0	$18/5$
s_2 ENTERS s_3 LEAVES	x_1	1	0	$1/5$	$3/5$	$-1/5$	0	$3/5$	$\frac{3/5}{1/5} = 3$
	x_2	0	1	$-3/5$	$-4/5$	$3/5$	0	$6/5$	$\frac{6/5}{-3/5} = (NA)$
	s_3	0	0	1	1	-1	1	1	$\frac{1}{1} = 1$

TABLEAU 4

	BASIC	x_1	x_2	s_2	R_1	R_2	s_3	SOLUTION	RATIO
	Z		0	0	0	$(7/5)-M$	$-M$	$-1/5$	$17/5$
ALL Z COEF. NEGATIVE OR OPTIMUM	x_1	1	0	0	$2/5$	0	$-1/5$	$2/5$	
	x_2	0	1	0	$-1/5$	0	$3/5$	$9/5$	
	s_2	0	0	1	1	-1	1	1	OPTIMUM REACHED

OPTIMUM : $x_1^* = 2/5$; $x_2^* = 9/5$; $z^* = 17/5$