RIGHT HAND SIDE (CONTD.)

BASIC	Z	x_1	x_2	s_1	s_2	s_3	s_4	SOLUTION
Z	1	0	0	1/3	4/3	0	0	$12\,2/3$
x_2	0	0	1	.	.	.	.	4/3
x_1	.	.	.	.	.	.	.	10/3
s_3	.	.	.	.	.	.	.	3
s_4	.	.	.	.	.	.	.	2/3

THE OPTIMAL Z-EQUATION:

$$Z - 0.x_1 - 0.x_2 + \frac{1}{3}s_1 + \frac{4}{3}s_2 + 0.s_3 + 0.s_4 = 12\tfrac{2}{3}$$

$$Z = 12\tfrac{2}{3} - \frac{1}{3}s_1 - \frac{4}{3}s_2$$

THE ABOVE EQUATION IMPLIES

- IF S_1 or S_2 IS INCREASED FROM ITS CURRENT ZERO THEN Z WILL REDUCE.
- DECREASING s_1 AND s_2 (MAKING THEM NEGATIVE) WILL INCREASE THE Z VALUE
- THE RATE OF CHANGE OF Z VALUE WITH CHANGES IN S_1 IS 1/3; AND WITH CHANGES IN S_2 IS 4/3.
- THE RATE OF CHANGE OF Z WITH S_3 AND S_4 is ZERO.

NOTE THE FOLLOWING

- S_i IS ASSOCIATED WITH RESOURCE i
- INCREASING, SAY S_1, TO SOME POSITIVE VALUE IMPLIES THAT $x_1 + 2x_2$ IS LESSER THAN WHEN $S_1 = 0$. THIS IN TURN IMPLIES THAT $S_1 > 0$ MEANS REDUCTION IN RESOURCE (A). (RECALL: $x_1 + 2x_2 + S_1 = 6$ ····· (A)) SIMILARLY MAKING $S_1 < 0$ IMPLIES INCREASING (A).
- HENCE $\frac{1}{3}$ IS "UNIT WORTH" OF A; 4/3 "UNIT WORTH" OF B. 0 IS "UNIT WORTH" OF C; 0 "UNIT WORTH" OF D.