A.

Linear programming is an optimization technique for a system of linear constraints and a linear objective function, its application is to find the values of the variables that maximize or minimize the objective function.

Its application to engineering is it allows time variations for the frequency ~~of~~ it helps solve design and manufacturing problems.

B. i

$\max z = 30x_1 + 20x_2$

Substituting

$2x_1 + x_2 \leq 1000$

$x_1 + x_2 \leq 8000$

$x_1, x_2 \geq 0$

$z - 30x_1 - 20x_2 = 0$

x_1	x_2	S_1	S_2	z
2	1	1	0	1000
1	1	0	1	800
-30	-20	0	0	0

$R_1 = \text{Row } 1/2$, $R_3 - 30R_1 + R_3$

$R_2 = -R_1 + R_2$

x_1	x_2	s_1	s_2	z
1	1/2	1/2	0	500
1	1	0	1	800
-30	-20	0	0	0

1	1/2	1/2	0	500
0	1/2	-1/2	1	300
0	-5	15	0	15000

1	1/2	1/2	0	500
0	1/2	-1/2	1	3000
0	-5	15	0	15000

$R_2 \rightarrow 2R_2$

1	1/2	1/2	0	500
0	1	-1	2	600
0	-5	5	0	15000

$R_1 = -\frac{1}{2} R_2 + R_1$ $\quad R_3 = 5R_2 + R_3$

1	0	1	-1	200
0	1	-1	2	600
0	-5	15	0	15000

1	0	1	-1	200
0	1	-1	2	600
0	0	10	10	18000

$x_1 = 200$, $x_2 = 600$ and
$z = 18000$