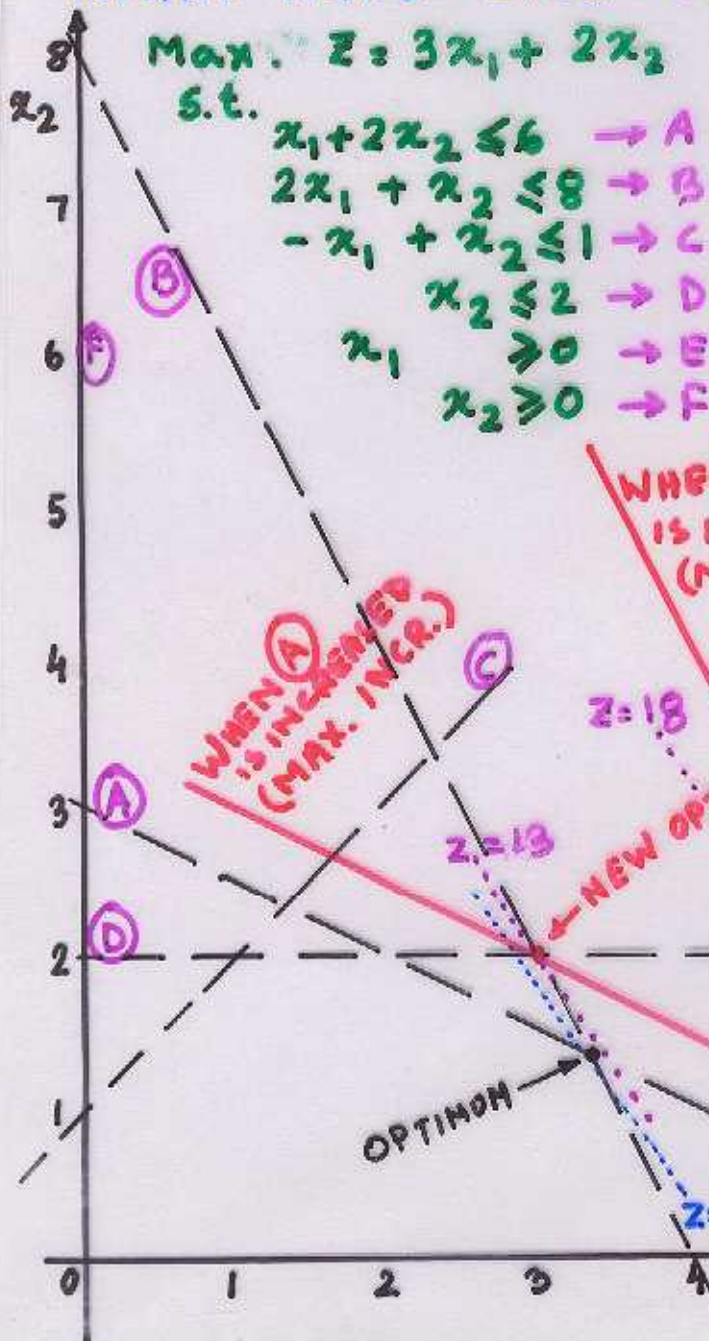


LINEAR PROGRAMMING - SENSITIVITY ANALYSIS

IT IS IMPORTANT THAT WE BE ABLE TO TELL HOW THE OPTIMAL WILL CHANGE IF ONE OF THE FOLLOWING CHANGES:

- CHANGES IN RIGHT HAND SIDE OF CONSTRAINTS
- CHANGES IN COEF. OF THE OBJECTIVE FUNCTION
- CHANGES IN COEF. OF THE CONSTRAINTS
- ADDITION OF A CONSTRAINT OR ACTIVITY

RIGHT HAND SIDE OF CONSTRAINTS



• NOTE THAT SCARCE RESOURCE A & B CAN BE INCREASED BY 1 AND 4 UNITS RESPECTIVELY BEFORE THEY BECOME REDUNDANT.

• INCREASING A BY ONE UNIT LEADS TO A $13 - 12\frac{2}{3} = \frac{1}{3}$ UNIT INCREASE IN Z.

• INCREASING B BY 4 UNITS INCREASES Z BY $18 - 12\frac{2}{3} = 5\frac{1}{3}$ UNITS. THAT IS INCR. IN Z PER UNIT INCR. IN B = $(5\frac{1}{3})/4 = 4/3$.

• ABUNDANT RES. C & D CAN BE REDUCED BY 3 & $\frac{2}{3}$ UNITS WITHOUT CAUSING ANY CHANGE IN Z.

• THE "UNIT WORTH" OR "SHADOW PRICES" ARE AS FOLLOWS:

A : $\frac{1}{3}$ C : 0
 B : $\frac{4}{3}$ D : 0