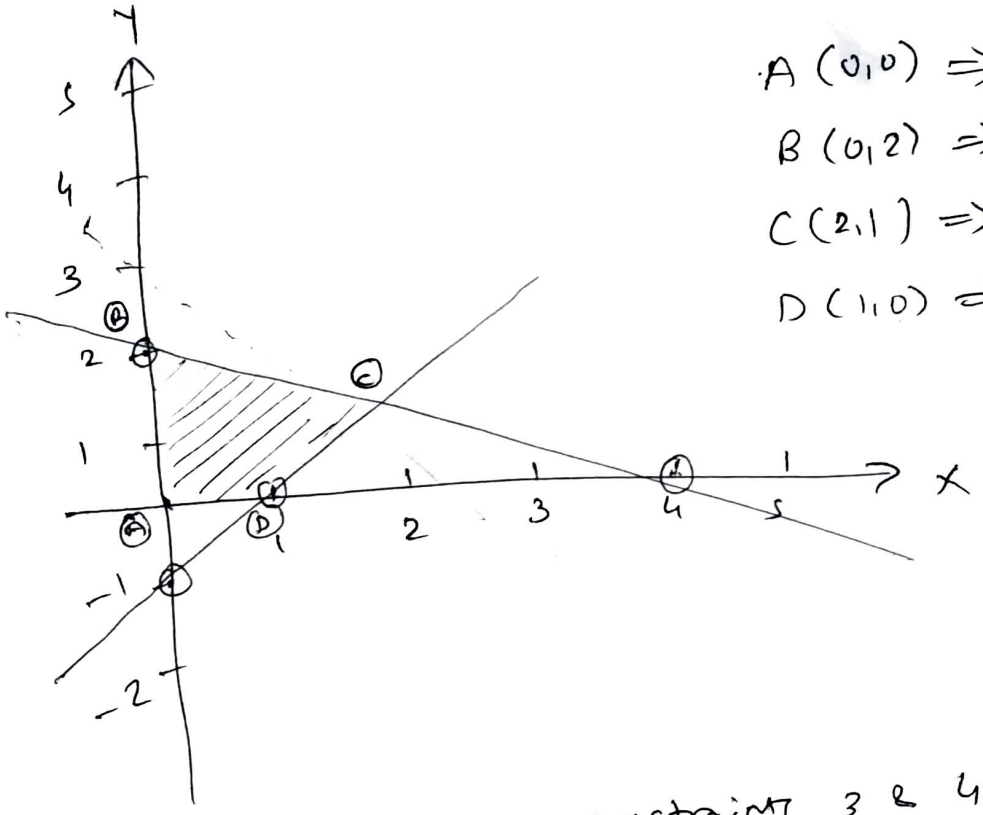
Maximize $Z = 3x + 2y$

Sub to $x \geq 0, y \geq 0$

$x + 2y \leq 4 \Rightarrow (0,2)\ (4,0)$

$x - y \leq 1 \Rightarrow (1,0)\ (0,-1)$



A $(0,0) \Rightarrow Z = 0$

B $(0,2) \Rightarrow Z = 4$

C $(2,1) \Rightarrow Z = 8$ ✓

D $(1,0) \Rightarrow Z = 3$

For point C, solve constraints 3 & 4

$$x + 2y = 4$$
$$x - y = 1$$
$$3y = 3 \Rightarrow y = 1 \Rightarrow x = 2$$

For $Z = 3x + 2y \rightarrow$ points are $(0,3)\ (2,0)$

$3x + 2y = 8 \rightarrow$ slope $-3/2$

↳ $(0,4)\ (8/3,0)$

$3x + 2y = 4 \rightarrow (0,2)\ (4/3,0)$

$3x + 2y = 3 \rightarrow (0,3/2)\ (1,0)$

$3x + 2y = 0 \rightarrow (0,0)$