

Quiz #2

Please show your work and feel free to use the back of the sheet if you need more room.

1 Consider the following 1 dimensional linear programming problem:

$$\begin{aligned} &\text{Maximize } z = 2x \\ &\text{subject to} \\ &\quad x \leq 6, \\ &\quad x \geq 4, \\ &\quad x \geq 0 \end{aligned}$$

For each of the following points, say whether the point is an extreme point of the feasible set, an optimal solution, both or neither: $x = 4$, $x = 5$, $x = 6$

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$$\begin{aligned} &\text{Maximize } z = 2x + 3y \\ &\text{subject to} \\ &\quad 3x + y \leq 6, \\ &\quad x + y \leq 4, \\ &\quad x + 2y \leq 6, \\ &\quad x \geq 0, y \geq 0 \end{aligned}$$