

Provide a clear and organized presentation. Show all of your work, completely simplify your answer, and give exact values only.

Use Linear Programming to maximize z subject to the following constraints if $z = 9x + 2y$:

$$2x + y \leq 80$$

$$3x + y \leq 90$$

$$6x + y \leq 150$$

$$x \geq 0$$

$$y \geq 0$$