

Dr. Z.'s Math 354 REAL Quiz #3

NAME: (print!) \_\_\_\_\_

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1. (3 pts.) Write the following linear programming problem in matrix form. First introduce slack variables, and give them names.

Maximize  $w = 2x + 3y + 5z$  subject to

$$x + 5y + z \geq 5 \quad , \quad 4x + 2y + 5z \geq 12 \quad , \quad x + y + z = 10 \quad , \quad x \geq 0 \quad , \quad y \geq 0 \quad , \quad z \geq 0 \quad .$$

2. (5 pts.) Sketch the set of feasible solutions to the given linear programming problem

Maximize  $z = 2x + 3y$  subject to:

$$x + y \leq 4 \quad , \quad 3x + y \leq 6 \quad , \quad x + 3y \leq 6 \quad ,$$

$$x \geq 0 \quad , \quad y \geq 0 \quad k = 6, 12 \quad .$$