This quiz is worth 25 points. You should clearly show all of your work and justify your answers where appropriate.

1. 25 points Consider the following linear programming problem:

$$\max P = x + 2y + 2.2z$$
$$2x + y + 0.8z \le 15$$
$$x + 3y \le 32$$
$$x + y + z \le 10.8$$
$$x \ge 0, y \ge 0$$

(a) Rewrite the constraints (using slack variables) and profit function in the necessary form to set up the initial simplex matrix.

(b) Give the initial simplex matrix.

(c) Using the Simplex Method software (http://www.math.louisville.edu/~williams/Simplex.html), give the final matrix. Identify and give the values for all basic variables, non-basic variables, and determine the maximum profit.