**Problem #1:**

Solve the following linear programming problem by maximizing the value of the function, *f(x,y)*, subject to the given constraints.

The values of both *x* and *y* should be non-negative.

***Question*:** What are the values of *x* & *y* which maximize the value of *f(x,y)* and what is that maximum value of *f(x,y)*?

**\*Solution #1:** The value of **x =** 1.42429, **y** = 5.468927, and the maximum value is 9.30791.

**Problem #2:**

Solve the following constrained non-linear optimization problem by maximizing the value of the function, *f(x,y)*, subject to the given constraints.

***Question*:** What are the values of *x* & *y* which maximize the value of *f(x,y)* and what is that maximum value of *f(x,y)*?

**\*Solution #2:** The value of x = 0.726563, y = 0.686719, and the maximum value is 21.19922.

**Problem #3:**

Solve the following system of linear equations...

1. by using the Excel Solver.
2. by using matrix inversion in Excel.

***Question*:** What are the values of *x1* through *x4* which satisfy the system of linear equations? Do you get the exact same solution from both methods?

**\*Solution #3:**

The values of x1 through x4 are: Matrix Solver

|  |  |  |
| --- | --- | --- |
| X1 | 108 | 1 |
| X2 | -56 | 1 |
| X3 | -16 | 1 |
| X4 | 0 | 1 |