

MA 162: Finite Mathematics

Fall 2014

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Announcements:

- Homework 4.2 due Tuesday at 6pm.
- Exam #2 is TONIGHT 5-7pm

2.6 The Inverse of a Square Matrix

- Check if two matrices are inverses.
- Find an inverse.
- Formula for 2×2 matrices.
- Use inverses to solve systems of equations.

Quick Review

3.1 Graphing Systems of Linear Inequalities in Two Variables

- Graph inequalities on a Cartesian Plane
- Graph a system of linear inequalities on a Cartesian Plane
- Bounded vs. Unbounded

3.2 Linear Programming Problems

- Consists of an objective function and constraints.
- Setup linear programming problems from a word problem description without solving.

3.3 The Method of Corners

- Graph the feasible set.
- Find the corner points.
- Evaluate the objective function at each corner point.
- Choose the largest or smallest value depending on whether you are maximizing or minimizing the objective function.

4.1 The Simplex Method (Maximization)

- Standard Maximization Problems
 - The objective function is to be maximized.
 - All variables are non-negative.
 - All other linear constraints may be written so the expression involving the variables is less than or equal to a non-negative constant.
- Slack Variables
- Basic vs. Non-basic variables.
- Selecting the Pivot Element.
- Setup the initial table.

4.1 The Simplex Method (Maximization)

- The actual method.
 - Setup the initial table.
 - Determine whether the optimal solution has been reached. If so, you only need to read the solution off the table. If not, then you will need to do a pivot operation.
 - Perform the pivot operation (if optimal solution not already met).
 - Read the optimal solution off the final table.

4.2 The Simplex Method (Minimization)

- We only covered the first few pages of this section. (Nothing about the dual problem.)
- If a minimization meets all the same requirements as a standard maximization problem, then to minimize C , all we have to do is switch to maximizing $P = -C$.
- Everything else with the Simplex Method is the same (because we changed to a maximization problem).
- At the end, remember to change the sign on the final answer you got from the Simplex Method because we have to switch back to C from P .