MATH 2554 : 4.5 Review Sheet

Key Concepts

Guidelines for Optimization Problems

1. Read the problem carefully, identify the variables, and organize the given information with a picture.

2. Identify the objective function (the function to be optimized). Write it in terms of the variables of the problem.

3. Identify the constraint(s). Write them in terms of the variables of the problem.

4. Use the constraint(s) to eliminate all but one independent variable of the objective function.

5. With the objective function expressed in terms of a single variable, find the interval of interest for that variable.

6. Use methods of calculus to find the absolute maximum or minimum value of the objective function on the interval of interest. If necessary, check the endpoints.