

DPGRAPH Assignment #10 - Math 260 – Towers

The purpose of this exercise is to use DPGRAPH to help analyze an optimization problem. The problem is to maximize $f(x, y) = \sqrt{6 - x^2 - y^2}$ subject to the constraint $x + y - 2 = 0$.

1. Use calculus (paper and pencil) to find the solution of the maximization problem above. This gives you an x and a y . Plug these into the function f to get a z value.
2. Use DPGRAPH to plot the surface $z = \sqrt{6 - x^2 - y^2}$.
3. Add the constraint $x + y - 2 = 0$ to your plot.
4. Add a small sphere centered at your solution to the maximization problem.
5. Turn in the plot along with your pencil and paper work. Adjust the bounding box of your plot so that it is possible to see clearly that your small sphere marks the location of the solution to the maximization problem.