

Worksheet for Sections 13.8-13.9

You will solve the following problem in two ways. Find the point (x, y, z) in the first octant ($x > 0, y > 0, z > 0$) for which $3x + 2y + z = 24$ and for which $f(x, y, z) = x^2yz$ is a maximum.

1. Solve the problem by solving the constraint for one of the variables, say z , and making the substitution in the objective function.

2. Solve the problem using Lagrange multipliers. Which method is easier?