

11.1 Functions of Several Variables

Functions can be described

- Verbally
- Numerically
- Algebraically
- Graphically

Example 1 – Cobb-Douglas Production Formula

Example 2

Find the domain of and range of $f(x, y) = \sqrt{1 - x^2 - y^2}$

Example 3

Sketch the graph of $f(x, y) = \sqrt{1 - x^2 - y^2}$

Level Curves

Example 4

Sketch level curves for $f(x, y) = \sqrt{1 - x^2 - y^2}$

Example 5

Sketch level curves for the Cobb-Douglas Production formula

Functions of 3 or more variables

Example 6

Find the domain of f if

$$f(x, y, z) = \ln(x + y) - yze^x$$

Level Surfaces

HW # 1, 3, 5, 13, 15, 17, 31-36