

A function f of two variables is a rule such that to each ordered pair (x,y) in the domain of f there corresponds one and only one number $f(x,y)$.

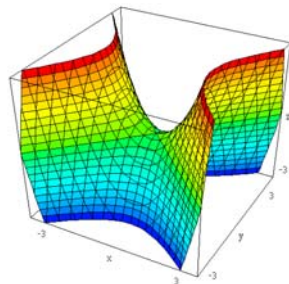
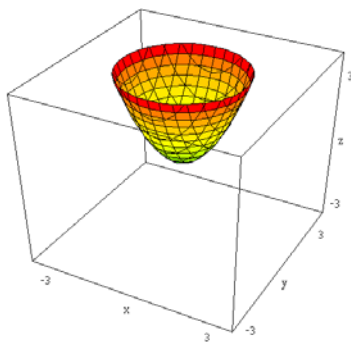
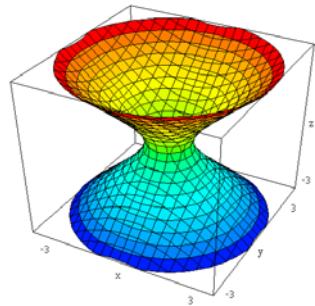
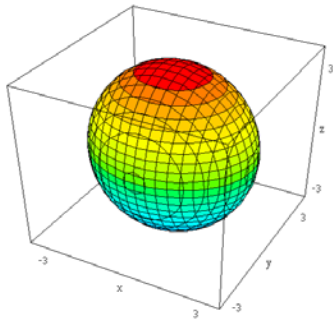
If the domain is not stated, it will be the largest set of ordered pairs for which the function is defined.

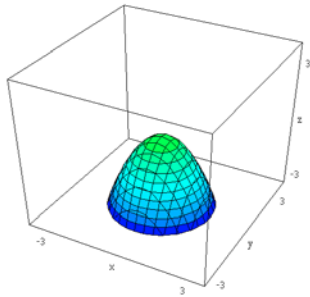
Example: #6

To evaluate a function of more than one variable you simply plug in appropriate values.
#12

#20

Graphs of functions of two independent variables are called Surfaces in three-space.
Examples:





Functions of more than one independent variable are very important in applications since many things we wish to study depend on more than one thing.

Cobb-Douglas Production Function— a function used to model the output of a company or country is called a production function, the most famous of which is the Cobb-Douglas Production Function $P(L, K) = aL^b K^{1-b}$ where a , and b are constants with $a > 0$ and $0 < b < 1$. Here P represents total production as a function of the units of labor L , and units of capital K . (Labor is measured in work-hours and capital means invested capital including cost of buildings, equipment, and raw materials.

Example:#27