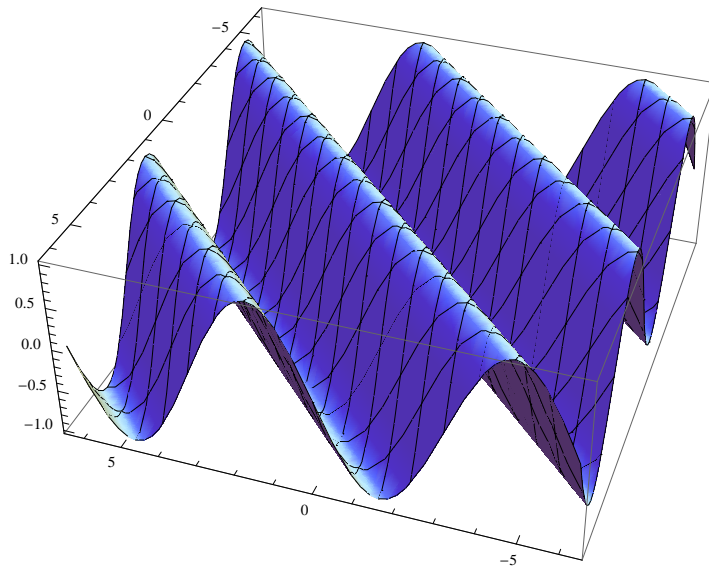


Math 53 Discussion

Practice Problems: Sketching functions in two variables, contour plots

1) Think about the surface $z = \sin(x + y)$ given in lecture. What does the contour plot look like? Why does your contour plot give the surface below?



Over for 2) →

2) Consider the surface $z = f(x, y) = x^2 - y^2$. What does the contour plot look like? Suppose we keep $x = 1$ fixed and move in the y direction from $y = 0$ to $y = 2$. What does z change by? The notion of fixing one variable and seeing how $f(x, y)$ changes when we vary the other variable will lead us to partial derivatives.

