14.1: Functions of Several Variables

- **Quantities depending on more than 1 variable**

  Example: Temperature in a room $T(x, y, z, t)$

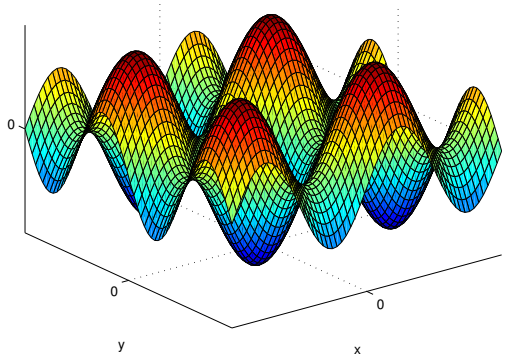
- **Evaluating functions: several inputs, but only 1 output**

  Example: $f(x, y, z) = x + 2y + 3z$

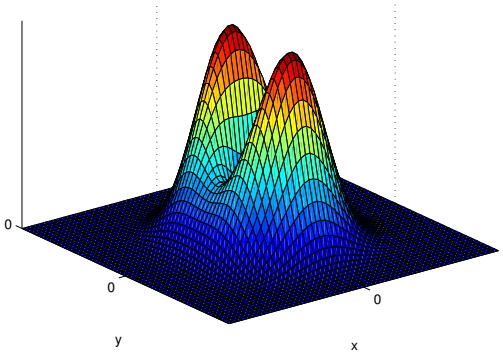
  $$f(4, 5, 6) = 4 + 2(5) + 3(6) = 32$$

  Not $f(x, y, z) = x + 2y + 3z = 4 + 2(5) + 3(6)$

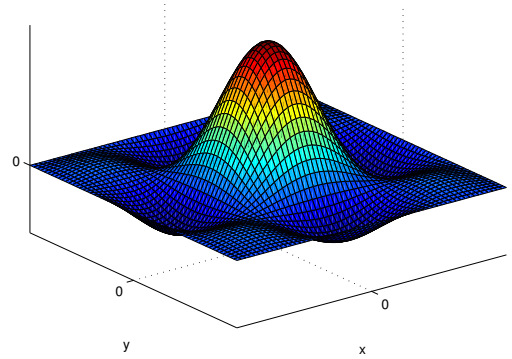
14.1: Graphs and Level Curves



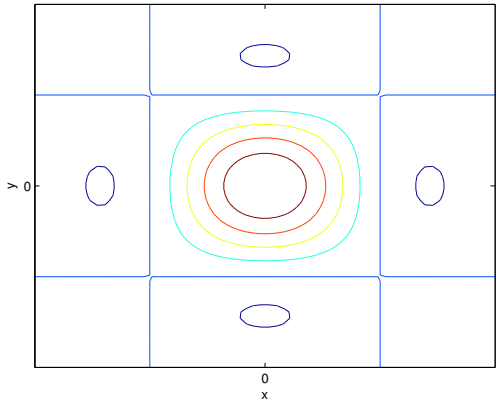
(c) $f(x, y) = \sin x + \sin y$



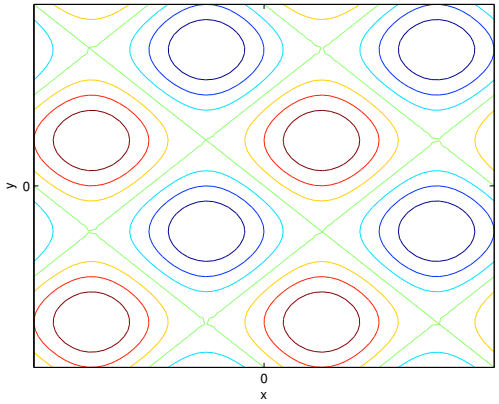
(d) $f(x, y) = (x^2 + 3y^2)e^{-x^2-y^2}$



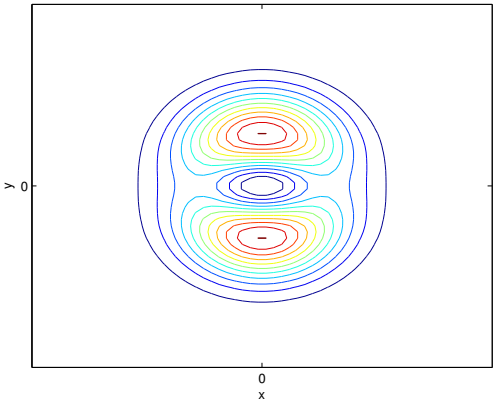
(e) $f(x, y) = \dfrac{\sin x \sin y}{xy}$



(f)



(g)



(h)