

Day 3

- [Linear Functions](#)
 - 2D table of values for Total revenue T for selling R gallons of reg gas
 - Find an equation that gives T for selling R gallons
 - 3D table of Total Revenue T of selling R gallons of regular and S gallons of supreme gas
 - Find an equation that gives the total Revenue of selling R gallons of reg and S gallons supreme.
 - [Solution](#)
- [Generalizing for each case: 2-D and 3-D.](#)
 - 2-D line equation:
 - $y - y_1 = m(x - x_1)$
 - $y = m(x - x_1) + y_1$
 - $y = mx + b$
 - 3-D line equation – this is a [plane](#)
 - Same idea – but we need 2 slopes (one for each change in z depending on which of the 2 input variables we're talking about.)
 - $z = m(x - x_0) + n(y - y_0) + z_0$
 - $z = mx + ny + c$
 - Where m is slope in x direction, n is slope in y direction, and c is z – intercept.
 - Relate back to gas example
 - [Example 3D table](#)
 - Is it a linear function(plane)? How do we know?
 - Find the equation.
 - ✍ *You Try It*
Section 12.4 # 23 Answer in text
 - [Linear Equations from contour diagrams](#)
 - Is it a linear function(plane)? How do we know?
 - Find the equation.
 - [Function with contour diagram: parallel lines, but not equally spaced.](#)
 - ✍ *You Try It*
Section 12.4 # 21 Answer in text