Study guide for quiz 05

Quiz problems include both the lecture contents and homework problems.

1. Section 14.2: Review and memorize definitions of limit (page 816 and page 823, in polar coordinates) and continuity (using ε and δ) for functions of two or more variables. Note that in equation (1), page 823, "$|r| < \delta$" should be "$0 < |r| < \delta$" instead (or you can write "$0 < r < \delta$" without the absolute value).

   Review the examples where the "Two-Path Test for Nonexistence of a Limit" is applicable.

   Keep in mind that, one dimensional test (limit along a path) either shows that the two dimensional limit does not exist (two different limits on two different paths), or is inconclusive (all limits are the same on all the paths you tested does not mean the two dimensional limit exist).

2. Section 14.3:
   Study how to evaluate $\dfrac{\partial f}{\partial x}$, $\dfrac{\partial f}{\partial y}$ at (x_0, y_0) when $f(x, y)$ is given explicitly, and $\dfrac{\partial z}{\partial x}$, $\dfrac{\partial z}{\partial y}$ at (x_0, y_0, z_0) when $z(x, y)$ is given implicitly by $F(x, y, z) = 0$.