MA 262: Final Exam Review **Name:**_____

This review covers material since Exam 2. The final exam is comprehensive, so be sure to review the earlier material as well.

(1) Surface Integrals and Stokes' theorem

   (a) Be able to find write down equations for standard parameterizations of surfaces
   (b) Be able to match a parameterization with the image of a surface.
   (c) Know how to find the orientation of a parameterized surface.
   (d) Know and be able to use the definition of surface integral of a scalar field and vector field
   (e) Know the statement of Stokes' theorem and the Divergence Theorem
   (f) Be able to use Stokes' theorem to calculate the circulation of a vector field over a surface
   (g) Be able to use Stokes' theorem to calculate the line integral of a vector field over a curve bounding a surface
   (h) Be able to use the divergence theorem to calculate the flux of a vector field through a closed surface
   (i) Be able to use the divergence theorem to relate the flux of a vector field through one surface to the flux through a different surface having the same oriented boundary

(2) Know the answers to the project questions distributed in class (and posted on the website).