Math 2374  
Spring 2008  
Topic list for final exam

Directional derivatives  
Tangent planes to surfaces  
Parametrizing curves and surfaces  
Double and triple integrals  
Areas of regions in $\mathbb{R}^2$  
Volumes of regions in $\mathbb{R}^3$  
Path integrals of real-valued functions  
Line integrals of vector fields  
Surface integrals of real-valued functions  
Surface integrals of vector fields  
Arc length and surface area  
Mass of surfaces and solids  
Partial derivatives and the chain rule  
Gradients and level sets  
Change of variables  
Polar, cylindrical, and spherical coordinates  
Fundamental Theorem for line integrals  
Divergence and curl  
Green’s Theorem  
Stokes’ Theorem  
Gauss’ Theorem  
Taylor approximations  
Classifying extrema