

## Review 2 Math 261

Any term in **bold face** know the definition well enough to state it on the test. The definition you give should be very similar to the one in the book or one with similar detail.

Section 14.1 Terms: **function of several variables, level curves**, domain, range,

be able to find domains and level curves **Sample problems** : exercises 898# 17, 37

Section 14.2 Terms: **limit of  $f(x,y)$  as  $(x,y)$  approaches  $(a,b)$ , continuous at  $(a,b)$** ( in terms of limits)

be able to evaluate limits along different paths. show limits exist or don't exist, show a functions is continuous (807) **Sample problems** : exercises 908-909# 11, 27

Section 14.3 Terms: **partial derivatives** (in terms of limits),

know notations for partial derivatives (912), how to compute partials(912), **Sample problems** : examples 4, 7, 8 pg 920-921 exercises # 17, 49

Section 14.4 Terms: **tangent plane, linearization differential  $dz$**

know how to: find tangents planes, approximate with tangent planes, compute  $dz$  **Sample problems** : example 2, pg 930-931 exercises # 11, 27, 33

Section 14.5 Terms: **chain rules, implicit function theorems**

be able to apply the chain rules to find partials and derivatives **Sample problems** : examples 3, 5 pg 938-939 exercises # 21, 45

Section 14.6 Terms: **directional derivative, gradient, tangent plane to level surface**

be able to: compute gradients and directional derivatives in different ways, apply properties of gradient **Sample problems** : example 6, pg 951 exercises #11, 23

Section 14.7 Terms: **local max/min, critical points, second derivative test**

be able to: find critical points and apply the second derivative test. **Sample problems** : examples 3, 6 pg 961 exercises # 9,37

Section 14.8 be able to set up a system of equations for lagrange multipliers and be able to solve simple systems of equations **Sample problems** : examples 2,3 pg 970 exercises # 3,5,7,25