

Math 324 Final Exam Checklist

MATERIAL FROM BEFORE EXAM 2 (See Exam 1 and Exam 2 Checklist for discussion of each topic with reference to homework problems):

1. 15.1, 15.2, 15.3, 15.4: Double Integrals and Computation
2. 15.6: Triple Integrals
3. 15.5/15.6: Double and Triple Integral Applications
4. 15.7/15.8: Cylindrical and Spherical Coordinates
5. 15.9: Change of Variable
6. 14.5: The Chain Rule
7. 14.6: Directional Derivatives and Gradients
8. 16.1: Introduction to Vector Field
9. 16.2: Line Integrals
10. 16.3: Conservative Vector Fields
11. 16.4: Green's Theorem
12. 16.5: Curl and Div
13. 16.6: Parameterizing Surfaces

NEW MATERIAL:

1. **16.6: Surface Area and Normal Vectors for Surfaces**
 - Finding normal vectors for surfaces. (HW 8/1 and used often elsewhere).
 - Finding surface area. (HW 8/2-4).
2. **16.7: Surface Integrals**
 - Surface integral for scalar fields using parameterization. (HW 8/5-10, HW 9/7)
 - Surface integral for vector fields using parameterization. (HW 9/1-6)
3. **16.8: Stokes' Theorem**
 - Going from the surface integral of a curl to a line integral on the boundary. (HW 9/8-9)
 - Going from a line integral on a closed curve to a surface integral. (HW 9/10-11)
4. **16.9: Gauss' (Divergence) Theorem**
 - Going from a closed surface integral to a triple integral over interior. (HW 9/12-15)