Assignments to be graded.

• (10 points) Homework F. §12.4 #32. Write out dV, the linear approximation of V for $V = \pi r^2 h$. Due Friday, 8 October 2004.

You may check your answer by computing the exact value.

- (20 points) Homework G. §12.5 #16, #34. Due Wednesday, 13 October 2004.
- (10 points) Homework H. §12.6 #26. Due Friday, 15 October 2004.

We continue to be one day behind the schedule in the syllabus. I doubt it is wise to speed up. Notebook assignments. The assignment from §12.3 is repeated from the previous sheet. Curve: I adjusted the gradelines for the first exam. When computing your mid-term and final grades, the A gradeline is lowered 5 points and the gradelines for B,C and D are lowered by 10 points.

§12.3 #3, 5, 17, 18, 25, 50, 76abd, 78a, 79, 88, 89.
§12.4 #1, 3, 5, 11, 19, 21, 33, 35.
§12.5 #1, 3, 9, 11, 14, 15, 17, 18, 27, 33, 35a, 39, 41, 45.
§12.6 #1, 3, 7, 9, 11, 17, 19, 23, 25, 27, 35, 36, 43, 45, 55.

Topics to be covered.

- §12.3. Definition and computation of partial derivatives. Clairaut's theorem on mixed partial derivatives.
- §12.4. Definition of differentiable function. Finding tangent planes to graphs of differentiable functions.

Writing linear approximation to differentiable functions and using the approximation to estimate values of the function.

- §12.5. The chain rule. Using the chain rule to compute partial derivatives. Implicit differentiation.
- §12.6. Directional derivatives. The gradient vector. Finding direction of steepest increase. Using the gradient to find a tangent plane to level surfaces.

October 8, 2004