

# Numerical Programming

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AP#3

### Problem 3.1

1. Choose 2 different functions with one and two independent variables.
2. Compute normal vectors, tangent line/plane: a) using exact derivatives  
b) finite difference derivatives
3. Explore how accuracy of finite difference formulas affect the results.  
Provide evidence using plots and tables
4. Deliverables:
  - ▶ working code
  - ▶ 3 page paper explaining your work, conclusions with supporting tables and plots
  - ▶ 2 min video/screencast for TA with explanation and demonstration of your work
5. Your code must work for functions and points provided by TA
6. Deadline: 5 days after publication of AP