HPC Tutorial Topics Chapter 7 and 11

1. Write the partial fraction decomposition of rational expressions (denominator with linear and quadratic repeated factors).

2. Solve non-linear systems of equations: (ellipse and parabola) (hyperbola and parabola)

3. Create a real world example of a non-linear system of equations.

4. Show several different examples of finding limits using graphs and/or tables.

5. Use properties of limits to find the limit of expressions.

6. Find limits of expressions when the limit of the denominator is zero.

7. Use limits and the three-step process to determine whether a function is continuous at a given number. (rational and piecewise functions)

8. Use the definition of a derivative to find the equation of the tangent line to the graph at a given point.

9. Find the average rate of change of a projectile between two given times.

10. Use derivatives to find the instantaneous velocity of a falling object at a given time.