[Floating Point] How does a computer store numbers (binary numbers, floating point systems, rounding, chopping)?

[Bisection] What is the bisection algorithm? How does it convergence and when can it be applied?

[Fixed Point] What is the fixed point algorithm? How/when does it converge (know conditions on the function) and when can it be applied? Be able to draw a cobweb diagram.

[Newton's Method] What is Newton's method? How/when does it converge (know conditions on the function) and when can it be applied? Be able to draw the associated picture.

[Secant Method] What is the secant method? How/when does it converge and when can it be applied? Be able to draw the associated picture.

[Regula Falsi] What is the method of false position? How/when does it converge and when can it be applied? Be able to draw the associated picture.

[Linear Algebra] When does $Ax = b$ have a solution. Be able to calculate a determinate. Be able to solve Ax=b by hand with Gaussian elimination, with or without LU decomposition.

[Pivoting] Be able to solve, by hand, $Ax = b$, with pivoting, keeping track of rounding errors .

[Vector Norms] Know, and be able to calculate, the vector p-norms (including $p = \infty$).

[Matrix Norms] Know, and be able to calculate, the matrix p-norms. Understand the relationship between matrix norms and errors (forward/backward relative errors, condition number).

[Iterative Methods] Why would we use an iterative method for solving $Ax = b$? When does the iteration $x_{k+1} = Mx_k + f$ converge?

[Jacobi] Know the formula for the Jacobi method. When does it converge?

[Gauss Seidel] Know the formula for the Gauss-Seidel method. When does it converge?

[SOR] Know the idea behind the Successive over relaxation method. What other method can it reduce to?

In addition to the topics on this review sheet, you are also responsible for material from both homeworks and all quizzes.