Final Exam description
Math 152, Spring 2017

Format:

- Tuesday, April 11, 12:00-2:30

- Know your section number and instructor's name

- Attend the section in which you are registered:

  201: SRC A (Li)

  202: SRC B (Solymosi)

  205: SRC B (Yeager)

  206: SRC C (Wetton)

  208: SRC A (Iyaniwura)

- No calculators or any electronic devices, No notes

- Worth 50% of your final mark

- Two parts:
  - part A: 30 short questions, worth 1 mark each
  - part B: 6 long questions, worth 5 marks each

- Do all questions. Total 60 marks.

Material:

- Theory: vectors, vector addition and scalar multiplication, lines and planes in 2D and 3D, geometry of solutions to linear systems, reduced row echelon form, linear dependence and independence, homogeneous systems, rank, linear transformations, matrix representation and composition of linear transformations, equivalent statements to a matrix being invertible, complex arithmetic, complex exponential, polar representation of complex numbers.

- Techniques: lengths, dot product, projections, determinants, cross products, solving linear systems with Gaussian Elimination and Backward Substitution, MATLAB, matrix multiplication, rotations and projections and reflections in 2D, loop currents in electrical circuits, matrix transpose, matrix inverses, complex linear systems, eigenvalues and eigenvectors, matrix power times vector using eigen-analysis, solutions of linear DEs using eigen-analysis.

- Applications: geometry, electrical networks, and random walks.

Details:

- WeBWorK assignments #1-12
- MATLAB commands from labs #1 to #6.
- Online notes: Chapters 1-6
- Additional topics material in the chapters of the notes are not tested