

Topics for second half of MA 110 (old MA 108)

Exact equations, integrating factors and Bernoulli equations. Orthogonal trajectories. Lipschitz condition, Picard's theorem, examples of non-uniqueness.

Linear differential equations generalities. Linear dependence and Wronskians. Dimensionality of space of solutions, Abel-Liouville formula. Linear ODE with constant coefficients, characteristic equations. Cauchy-Euler equations. Method of undetermined coefficients. Method of variation of parameters.

Laplace transform generalities. Shifting theorems.