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**Martin Flashman\*** ([flashman@humboldt.edu](mailto:flashman@humboldt.edu)). *Mapping Diagrams Visualizing Functions and Equation Solutions: From Algebra Basics to Real and Complex Analysis*. Preliminary report.

A mapping diagram is an alternative to a Cartesian graph that visualizes a function using parallel axes. Like a table, it can present finite data, but it also can work continuously and dynamically with technology. Using GeoGebra as the primary technology, this presentation will cover topics from visualizing the algebra in solving simple linear equations to understanding the functions of real analysis for differentiation and integration. The conclusion will focus on complex analysis with new dynamic 3 dimensional mapping diagrams for visualizing complex polynomial functions and solutions to cubic equations. Background and examples can be found at Mapping Diagrams from A(lgebra) B(asics) to C(alculus) and D(ifferential) E(equation)s [<http://users.humboldt.edu/flashman/MD/section-1.1VF.html>] and at Mapping Diagrams to Visualize Complex Analysis [<https://www.geogebra.org/m/Ni69jyKs>]. (Received July 31, 2017)