

1135-R1-109

Martin Flashman* (flashman@humboldt.edu). *Making Sense of Complex Integration: Mapping Diagrams Created with GeoGebra to Visualize Definitions, Theory and Applications*. Preliminary report.

While teaching an undergraduate course in complex analysis in Spring, 2015, the author used GeoGebra 5.0 to introduce a new complex function visualization with dynamic 3 dimensional mapping diagrams. Some of this experience was reported previously in "Visualizing Complex Variable Functions with Mapping Diagrams: Linear Fractional Transformations." MAA Contributed Paper Session on Revitalizing Complex Analysis, Jan.9, 2016.

[<http://users.humboldt.edu/flashman/Presentations/JMM2016/MD.JMM.CV.1.9.16.3.html>]

In the simplest form for real variables mapping diagrams visualize tables and provide a valuable addition to graphs in understanding calculus and real analysis. Similarly, complex mapping diagrams can represent many visual aspects of complex analysis. This presentation will demonstrate recent work using mapping diagrams to explore and make sense of complex integration. Besides examining definitions, examples will illustrate basic theorems and applications. (Received July 27, 2017)