

1023-N5-1379

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One of the central ideas in the secondary mathematics curriculum is that of a function. One of our goals is to help our prospective teachers develop a rich understanding of the topic. Students tend to view the graph of a function as the function itself, instead of as a convenient way of summarizing the functional relationship. This obscures for example the view of a function as a map from domain to codomain. In this unit, prospective secondary math education students are provided with two complex-valued functions disguised as functions from R^2 to R^2 ($f(z) = z^2$ and e^z). Students are then asked to describe how the function behaves by looking at images of points and subsets in the domain. We focus on descriptive words such as stretching, rotating, folding-over, breaking and collapsing. We then return to functions from R to R , using this new geometric perspective to describe their behavior, and relate it to continuity and differentiability. Students are given several opportunities to describe the connection between this new geometric perspective of R -valued functions and the common two-dimensional graphs. After describing the unit, the presenters will share the results of an assessment of students' understanding as well as excerpts of the students' reactions to the unit. (Received September 25, 2006)