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1003-V1-824 **May Hamdan*** (mhamdan@lau.edu.lb), Lebanese American University, PO Box 13-5053/F64, Beirut, Lebanon. *Assisting students in coordinating between two equivalent definitions in the case of exponential functions.*

in this paper i discuss the importance of raising students' awareness to the merging of more than one definition for a given concept, in the specific case of exponential functions. students have a preexisting cognitive structure for the concept of exponential functions, at least in the case of . they can fill a table of values for functions , a in n, and compare the graphs of these functions on z. they are easily convinced that they can extend such functions over r. traditionally, students are introduced later in the course to 1-1, hence invertible functions, and realize that these functions are invertible, without recognizing their inverses. later the definition of the natural logarithm emerges as the definite integral between 1 and x of , where . they investigate this function to realize it is 1-1, and so must admit an inverse. unfortunately, at this point most textbooks fail to coordinate between the existing old function and the new needed inverse of the natural logarithm. this paper promotes seizing a great teaching opportunity in guiding students through realizing that the function which is sought as being the inverse of this $\ln x$ function, is a function for which they have an existing cognitive structure that was on hold. (Received September 30, 2004)