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Animating Web Pages with the TI-92

David Bowers
University College Suffolk
Ipswich IP4 1LT
United Kingdom
davidbowers@compuserve.com

The World Wide Web offers opportunities for providing learning material in qualitatively new ways. Such material can be regularly updated, is available remotely and on demand, and can incorporate interactive and multimedia features hitherto not possible using paper-based resources. This is true in mathematics as in other subjects.

Computer algebra systems, in particular the Texas TI-92, provide a learning environment in mathematics which is interactive and dynamic. It is unfortunate that most supporting material which includes the use of the TI-92, either teaching students the functionality of the machine or demonstrating its power as a tool for representing the dynamics of key mathematical concepts, tends to be paper-based and hence static in nature. This means that if such teaching material wishes to highlight the visualisation of the underlying processes, it can do so at best using a number of printed screen dumps.

If advances in computer and calculator technology can provide insights into the dynamic features of mathematics, it is desirable to have these features available within the medium through which the mathematics is presented. Web pages allow this. Simple web pages consist of text, graphics and hyperlinks to related pages. We shall demonstrate how the TI-GRAPHLINK™ can be used with freely available shareware programs to produce animated images which can be inserted into web pages to provide a dynamic display which simulates what appears on the screen of the TI-92.

Examples of the use of such animations include:

- demonstrating dynamic geometrical constructions;
- “real-time” function plots;
- illustrating the effect of varying function parameters;
- running simulations;

and many more.

No specialist knowledge of web authoring will be assumed - we concentrate on the benefits for mathematics education of incorporating the power of the TI-92 within internet-based provision.

A full version of this paper, including many examples, can be found at the following URL:
http://ourworld.compuserve.com/homepages/davidbowers/