

THE ENGINEER'S NEW POCKETKNIFE: THE GRAPHICS CALCULATOR

Lynette M Bloom and Ute A. Mueller
School of Engineering and Mathematics
Edith Cowan University, Perth, Australia
l.bloom@cowan.edu.au

ABSTRACT

The modern pocketknife, with its many features from corkscrew to can opener, is often viewed as an essential tool to carry at all times and to be used when needed. Students and teachers of engineering mathematics can view the graphics calculator in the very same way. It can be used at the tertiary level to considerably enrich the student's understanding and enjoyment of many of the topics covered in engineering mathematics units. The calculator is not a replacement for mathematical understanding, and indeed it requires some level of mathematical understanding for its effective use. However, with its combination of numerical, symbolic and graphical routines, it can take the time and tedium out of the calculations and at the same time provide the graphs which enhance the understanding of the concepts and help to provide a fuller picture of the topic being studied. This is the approach taken at our university. In this paper we elaborate on this theme, and we provide relevant illustrations of the use of modern graphics calculator technology in the engineering mathematics classroom.