

# Basic Mathematics

BY T. P. JONES, O.L.S.

The routine for generating the tangent of an angle is listed in Figure 1. Angular data for this sub-routine, which has been written to produce a function to double-precision, should be in degrees and decimal degrees, and not in radians.

The argument must be ZO#. The trig function computed will be in ZJ#. ●

```
40320 REM
40325 REM    >>> TANGENT ROUTINE <<<
40330 REM
10    INPUT ZO#: GOSUB 40335: PRINT ZJ#: GOTO 10
40220 ZT% = 0: IF ZO# < 0 THEN ZO# = ZO# * -1: ZT% = 4
40225 GOTO 40255
40250 ZT% = 2: IF ZO# < 0 THEN ZO# = ZO# * -1
40255 ZC# = 0.7853981633974483: ZO# = ZO# / ZC#: ZR% = INT(ZO#)
40260 ZO# = (ZO# - ZR%) * ZC#: ZR% = ZR% + ZT%
40265 ZP% = INT(ZR% / 8) * 8: ZR% = ZR% - ZP%: ZT% = ZR%
40270 ON (ZT% + 1) GOTO 40280, 40275, 40280, 40275, 40280, 40275, 40280, 40275
40275 ZO# = ZC# - ZO#
40280 IF ZT% > 3 THEN ZU% = -1 ELSE ZU% = 1
40285 ON (ZT% + 1) GOTO 40295, 40290, 40290, 40295, 40295, 40290, 40290, 40295
40290 ZQ% = -1: ZL# = 1: ZJ# = 1: GOTO 40300
40295 ZQ% = 1: ZL# = ZO#: ZJ# = ZO#
40300 ZK# = ZO# * ZO#: ZP% = 0: ZS% = -1
40305 ZP% = ZP% + 2: ZQ% = ZQ% + 2: ZL# = ZL# * ZK# * ZS% / (ZP% * ZQ%)
40310 IF ZL# <> 0 THEN ZJ# = ZJ# + ZL#: GOTO 40305
40315 ZJ# = ZJ# * ZU%: RETURN
40335 ZO# = ZO# / 57.29577951308232: ZM# = ZO#: GOSUB 40250
40340 ZO# = ZM#: ZM# = ZJ#: GOSUB 40220
40345 IF ZM# = 0 THEN ZJ# = 999999999 * SGN(ZJ#) ELSE ZJ# = ZJ# / ZM#
40350 RETURN
```

## THE ERINDALE REPORT

BY JACK YOUNG

**T**HE FALL term is underway again at Erindale with several new faces in faculty and an enthusiastic group of students. Our enrolment is decreased over last year - perhaps a reflection of the economy!

The annual awards presentation was held on October 6, hosted by the AOLS Education Foundation and the University. The award winners this year were:

### The Association of Ontario Land Surveyors Scholarships

John E. Jackson Memorial Award:  
J. Morgan Goadsby  
Category I:  
Dean Dunlop  
Category II:  
Shawn A. Jemett  
Donald H. Brown

Kenneth W. Hutchinson  
Russell J. Gohan

**O. J. Marshall Scholarship**  
Kenneth W. Hutchinson

**J. E. R. Ross Graduate Scholarship**  
Pierre Tretreault

**Wild Leitz Canada Ltd. Scholarship**  
J. Morgan Goadsby

**Hans Klinkenberg Memorial Award**  
Steven J. Balaban

**Canadian Institute of Surveying Membership Award**  
Geoffrey G. Aldworth

On October 13, the South Central Regional group held a joint meeting with the Survey Science students. Hugh O'Don-

nell, Surveyor General, was the guest speaker.

The Education Liaison Committee met with the students on September 21, to outline their activities for the year and introduce the first-year students to the Association.

The Survey Science Club is active, with Alan Worobec as President.

The new faculty this year include: Dr. Anne Boud, who specializes in photogrammetry and remote sensing, will also be involved in data management and computer applications; D. C. Kapoor, a former director of the International Hydrographic Bureau in Monaco. Kap is in charge of the new hydrographic program; our visiting professor this year is Dr. A. M. Wassef of the University of Cairo who will be teaching the undergraduate courses in geodesy. In addition, Paul Church, O.L.S. and Blain Martin, O.L.S. are assisting in the survey labs. ●