A DIFFERENT ANGLE

Mathematics is a subject that computer buffs often fight shy of. Nevertheless, there are times when programmers have to use mathematics in their programs in order to get them to work, like it or not! If you love programming, but have grim memories of O Levels and stuffy maths masters, this short series of articles is for you.

What kind of mathematics do programmers actually need to use? That depends, not surprisingly, on the type of program they are writing. The versions of BASIC supplied on many home computers have numerous built-in statements and functions for handling screen graphics — PLOT, CIRCLE, FILL, LINE, COLOUR, INK, PAPER etc. — so the problems of translating and rotating simple figures on the screen are not very great. Even so, there are times when trigonometrical functions such as COS, SIN and TAN will be needed, and, happily, BASIC is furnished with a good set of these. If the terms mean next to nothing to you, don't worry — all will be explained soon.

When it comes to statistics, however, BASIC really lets us down. Most versions of the language have no built-in statistical functions to help with the manipulation of data. If your program needs to predict who will win the next election or whether blue-eyed children will get firsts in their degree exams, you will have to program the functions yourself.

If you write games or typing tutors where the response times of the program user are important, again most versions of BASIC let you down. They simply do not provide the programmer with reliable timing functions. These are the three main areas — trigonometry, statistics and timing — that we will be looking at in this series of Basic Mathematics articles.

High school students of mathematics often