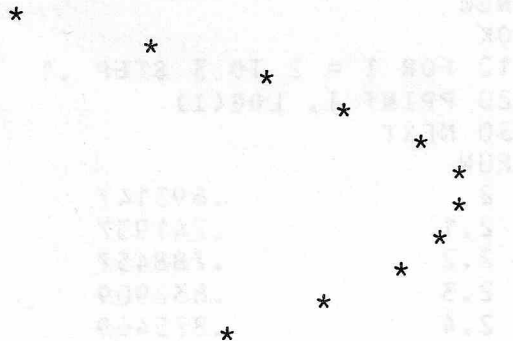


arguments of SIN, COS and TAN are given in radians. The result of ATN is in radians (in the range  $-\pi/2$  to  $\pi/2$ ). Since 360 degrees equals  $2 * \pi$  radians, you can convert degrees to radians by multiplying by  $(2 * \pi / 360) = .0174533$ , and you can convert radians to degrees by multiplying by  $(360 / (2 * \pi)) = 57.2958$ .

The following example uses SIN to print a sine wave on your console. You can interrupt it with <control-C>, vary the width of the wave by changing W and its frequency by changing D, and then CONTINUE. The TAB function used in line 40 is described in Section 5.

```
NEW
OK
10 W = 30
20 D = .23
30 I = I + D
40 PRINT TAB (W * (1 + SIN (I))); "*"
50 GOTO 30
RUN
```



```
^C
BREAK AT LINE 40
OK
```

### INT

In Extended XYBASIC you can use the function INT to find the integer part of a (floating point) numeric value. INT returns the largest integer less than or equal to the value of its argument. You can see how INT works from the following example.

```
PRINT INT (-1.3), INT (1.3)
-2 1
OK
```

Extended XYBASIC automatically performs an INT whenever it finds a floating point value when it expects an integer. For example, a reference to the array element A (1.3, 2.75) is evaluated as a reference to A (1, 2), since array subscripts must be integers.

### RND and RANDOMIZE

In a real time or process control environment you may wish to simulate a random process. For example, the designer of a telephone switching system