Manufacturing. He wants to measure widget resistance with a 16-bit digital ohmmeter attached to input ports 12 and 13, but like Buck Mulligan (in the OUT example above) he is confused about which bit each connector pin represents. Harry uses the following XYBASIC program:

```
NEW
10 X = IN (12) JOIN IN (13)
20 IF X = #FFFF THEN 10
30 FOR I = 0 TO 15
40 IF TEST (X, I) = 0 THEN PRINT "^GBIT #"; I
50 NEXT I
```

Line 10 constructs the value read from the ohmmeter ports, and line 20 loops until Harry puts a signal on a connector pin. Then the FOR loop starting at line 30 rings a bell (with <control-G>) and tells Harry which bit the pin represents.

PEEK

The PEEK function allows you to examine any memory location in your computer system. If you use memory mapped I/O (that is, if specific locations are used for input and output), you can use PEEK to perform inputs. To find out what is in location 10 of your computer's memory, just type

```
PRINT PEEK (10)
```

and XYBASIC will print the current value of location 10. The PEEK function will always return an 8 bit value (i.e. a number between 0 and 255).

The following program determines the values of the first 10 locations in memory and prints them on the console. Note that I goes from 0 to 9, since the address space of the 8080 starts at location 0 by convention.

```
NEW
10 FOR I = 0 TO 9                                    'SET UP LOOP
20 PRINT "LOCATION"; I; "CONTAINS"; PEEK (I)         'PRINT VALUE
30 NEXT I                                            'DO THE NEXT ONE
```

Although the largest integer value that can be represented in XYBASIC is 32767, you can PEEK at locations above 32767 by using negative integer arguments, because PEEK considers its argument to be an unsigned integer representation. You can use the UNS function described in Section 3 to see the actual location that PEEK will examine, as the following program shows.