

This will prevent the number of free bytes from appearing as a negative number.

### UNS

As described in detail under Integer Representations in Section 8 below, XYBASIC uses 16 bits to store integer values. When you PRINT an integer-valued formula, XYBASIC normally gives the value considered as a two's complement representation. But for some purposes you may want to use the function UNS to PRINT its value as an unsigned 16-bit representation instead. UNS is particularly useful in conjunction with commands and functions which take memory addresses (between 0 and 65535, rather than -32768 and 32767) as arguments. For example, you should say

```
PRINT UNS (FRE)
```

rather than PRINT FRE to find how many bytes remain free, as a value greater than 32767 would otherwise be printed as a negative number. Try the following program to see what UNSIGNED values various bit patterns represent.

```
NEW
OK
10 INPUT "TEST VALUE" X
20 PRINT "TWO'S COMPLEMENT VALUE IS", X
30 PRINT "UNSIGNED VALUE IS", UNS(X)
40 GOTO 10
RUN
TEST VALUE? -1
TWO'S COMPLEMENT VALUE IS      -1
UNSIGNED VALUE IS              65535
TEST VALUE? #7fff
TWO'S COMPLEMENT VALUE IS      32767
UNSIGNED VALUE IS              32767
TEST VALUE? -175
TWO'S COMPLEMENT VALUE IS      -175
UNSIGNED VALUE IS              65361
TEST VALUE? ^C
BREAK AT LINE 10
OK
```

Again, type <control-C> to exit from this program.

In Integer XYBASIC, UNS may only be used in PRINT commands. In Extended XYBASIC, UNS may be used anywhere in a formula, like any other function.

### DEF FN

XYBASIC has many useful functions, but it may lack one you need. Therefore the very powerful DEF command allows you to DEFINE your own functions. For example,

```
10 DEF FN DOUBLE (I) = I * 2
```

defines a function named DOUBLE which multiplies the value of its argument