

'SN_DISTR, H. Ibstedt, 930322

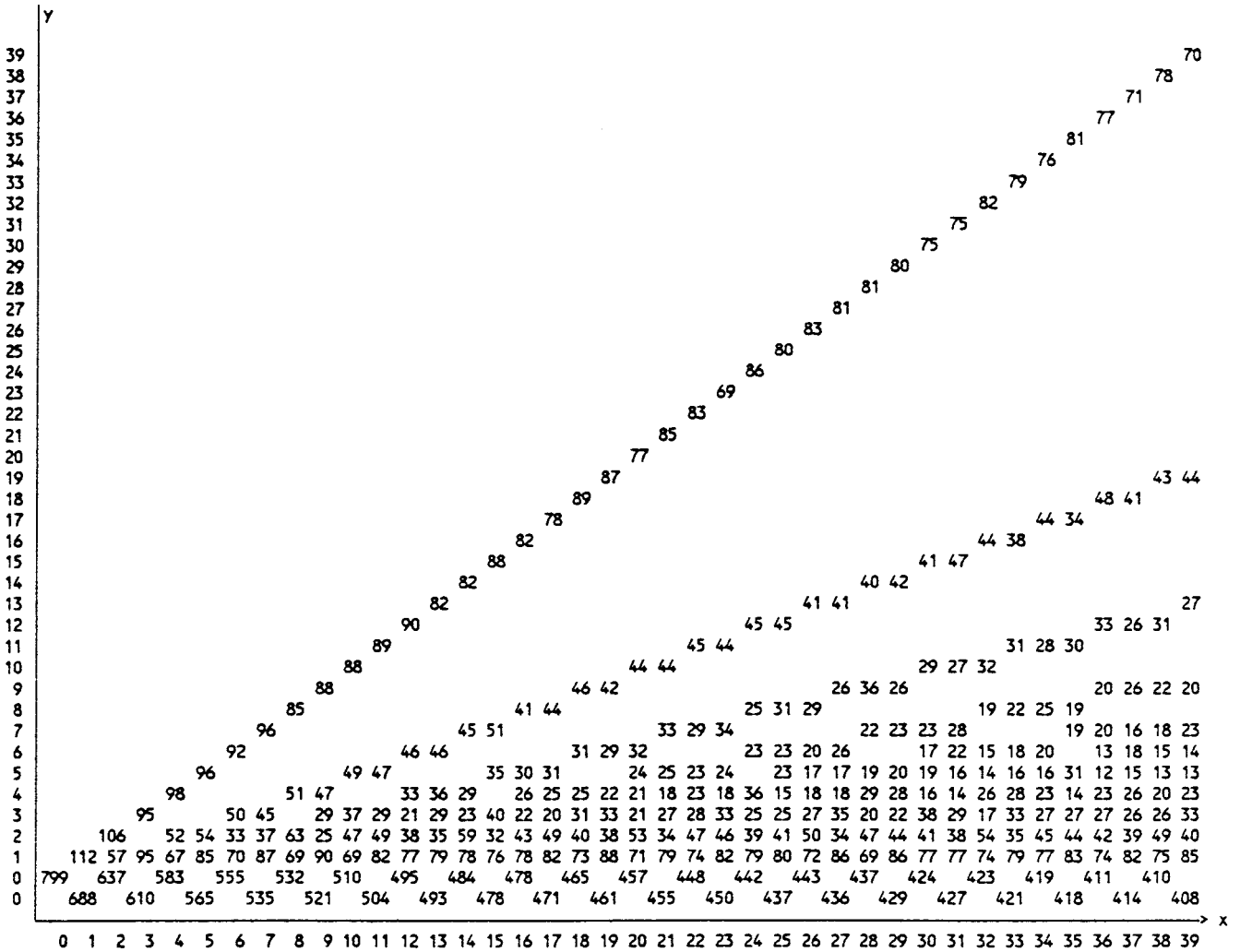
'The values of $S(n)$ for $n < 32000$ are input from the file SN.DAT and the number of values falling into each square of a 40×40 matrix are counted and displayed in a graph. An interesting pattern is formed by large primes while the bottom layer mainly resulting from composite numbers requires two lines in the graph.

'Set $I = 1021$ and $NB = 82$ on HPIIP.

```
DEFBNG A-S
DIM C(51,51)
CLS :WIDTH "LPT1:",130
LPRINT TAB(50) "The Smarandache function S(n)"
LPRINT TAB(50) "-----" :LPRINT :LPRINT
LPRINT TAB(35) "Number of values of S(n) in the interval  $800y \leq S(n) < 800(y+1)$ ."
LPRINT
LPRINT TAB(4) " | y"
LPRINT TAB(4) " | "
K=0
OPEN "SN.DAT" FOR INPUT AS #1
WHILE K<32000
INCR K
INPUT #1,S
I=K\800+1 :J=S\800+1
C(I,J)=C(I,J)+1
WEND
CLOSE #1
FOR J=40 TO 2 STEP -1 :LPRINT USING "###";J-1; :LPRINT " | ";
FOR I=1 TO 40
IF C(I,J)=0 THEN LPRINT SPC(3); ELSE LPRINT USING "###";C(I,J);
NEXT :LPRINT
NEXT
LPRINT USING "###";J-1; :LPRINT " | ";
J=1 :FOR I=1 TO 39 STEP 2
LPRINT USING "###";C(I,J); :LPRINT SPC(3);
NEXT :LPRINT
LPRINT USING "###";J-1; :LPRINT " | ";
FOR I=2 TO 40 STEP 2
LPRINT SPC(3); :LPRINT USING "###";C(I,J);
NEXT :LPRINT
LPRINT TAB(5) "L"; :FOR I=1 TO 120 :LPRINT "-"; :NEXT :LPRINT "> x"
LPRINT TAB(6); :FOR I=0 TO 39:LPRINT USING "###";I; :NEXT :LPRINT
LPRINT :LPRINT TAB(5) "Intervals:  $800x \leq n < 800(x+1)$ ."
LPRINT :LPRINT TAB(5) "SN_DISTR "DATES
LPRINT CHR$(12)
END
```

The Smarandache function S(n)

Number of values of S(n) in the interval $800y \leq S(n) < 800(y+1)$.



Intervals: $800x \leq n < 800(x+1)$.

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