

Try to outwit the computer opponent and make yours the last piece on the board. A game of careful strategy.

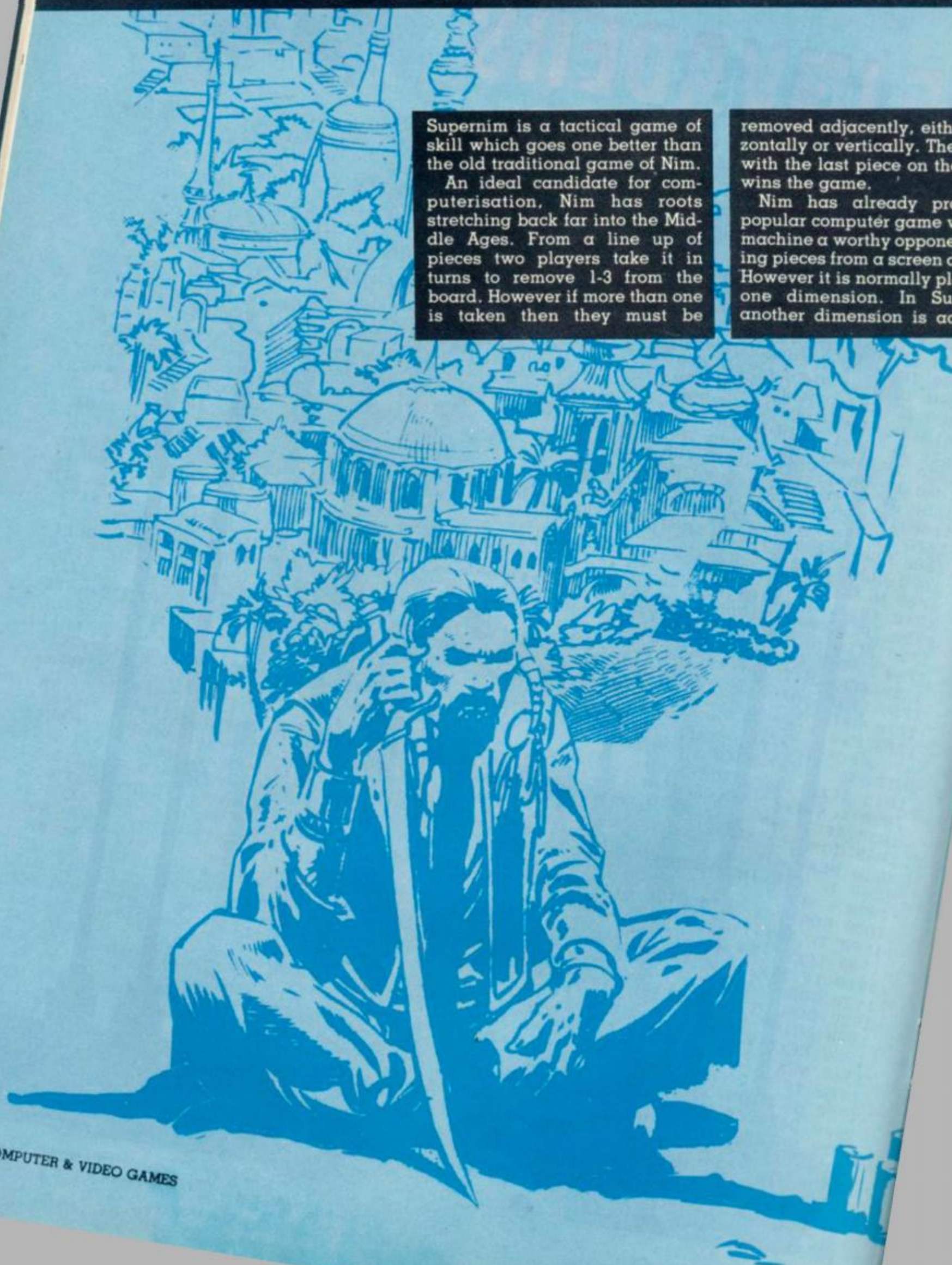
Supernim will run in Apple II systems with 16K. By Jerry Dubnoff

Supernim is a tactical game of skill which goes one better than the old traditional game of Nim.

An ideal candidate for computerisation, Nim has roots stretching back far into the Middle Ages. From a line up of pieces two players take it in turns to remove 1-3 from the board. However if more than one is taken then they must be

removed adjacently, either horizontally or vertically. The player with the last piece on the board wins the game.

Nim has already proved a popular computer game with the machine a worthy opponent, taking pieces from a screen display. However it is normally played in one dimension. In Supernim another dimension is added to



make the game a great deal more thought-provoking.

Ideally Supernim will run in Apple II systems having Firmware, Applesoft and 16K free memory. It should also run in 24K systems with Applesoft in RAM.

Supernim will amuse and challenge you. It has three standards of play and you can move on from a beginner rating to an intermediate and finally an advanced player.

You can also vary the initial number of sections and choose whether you would rather go first or second.

As famous eastern philosopher and Nim player, Ali Hazeer once said: "May you pick the last camel and be aboard his back, five minutes before it occurs to him to spit!"

```

10 REM SUPER-NIM
20 REM A MULTI-DIMENSIONAL GAME
30 REM COPYRIGHT 1979
40 REM BY JERRY DUBNOFF
50 FOR I = 770 TO 906: READ J: POKE
  I,J:K = K + J: NEXT I: IF K <
  > 8431 THEN STOP: REM DAT
  A ERROR
60 DATA 173,48,192,136,208,5,206
  ,1,3,240,9,202,208,245,174,0
  ,3,76,2,3,96,169,0,73,0,141,
  31,3,96,0,5,0,12,0,47,0,63,0
  ,84,0,87,0
70 DATA 219,219,27,56,46,62,9,
  88,48,46,36,17,37,55,14,9,39
  ,172,171,33,44,86,104,34,44,
  54,1,88,48,14,36,53,40,54,0,
  219,155,36,44,45,222,43,45,5
  4,73,33,36,63,9,45,0
80 DATA 219,219,34,36,53,53,53,3
  7,36,9,54,14,33,36,45,18,36,
  45,54,6,0,34,36,0,219,19,36,
  63,84,41,37,9,54,46,37,36,63
  ,73,49,54,45,36,4,0
90 IF PEEK (175) + 256 * PEEK
  (176) > 8157 THEN 130
100 POKE 232,32: POKE 233,3: TEXT
  : HOME: HGR: ROT=0: FOR I
  = 1 TO 5: SCALE=1: GOSUB 1

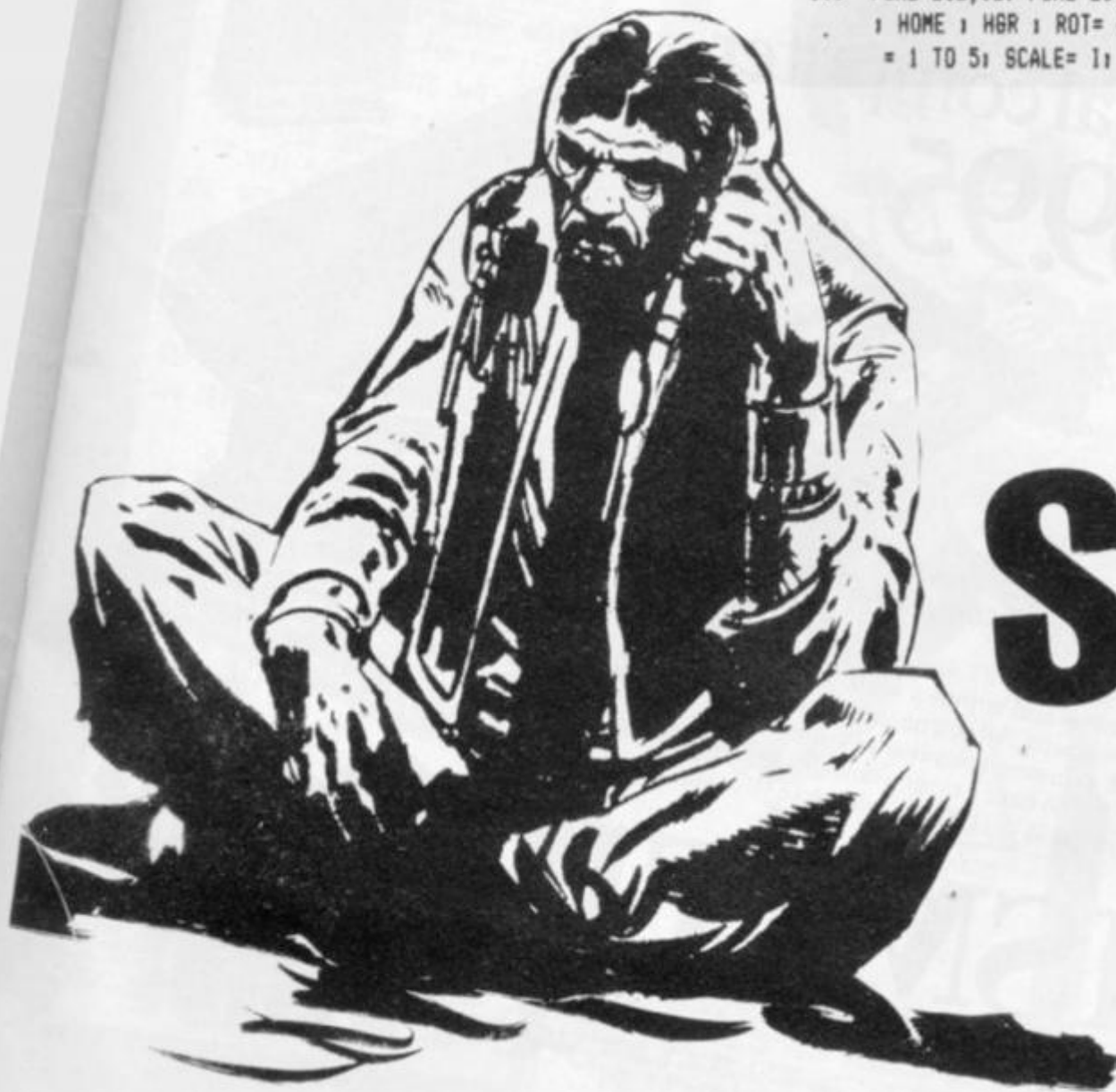
```

```

20: NEXT I: FOR I = 0 TO 128 STEP
4: ROT=1: GOSUB 120: NEXT I:
  FOR I = 1 TO 15: SCALE=1: GOSUB
120: NEXT
110 FOR I = 15 TO 1 STEP -1: SCALE=
  I: GOSUB 120: NEXT I: FOR I =
  1 TO 8: SCALE=1: GOSUB 120:
  NEXT I: HCOLOR=6: DRAW 1 AT
  140,90: FOR I = 1 TO 5: PRINT
  CHR$(7): NEXT I: GOTO 140
120 XDRAW 1 AT 140,90: FOR J = 1
  TO 5:K = PEEK (-16336): NEXT
  : XDRAW 1 AT 140,90: RETURN
130 TEXT: HOME: VTAB 12: HTAB
  11: PRINT "### SUPER-NIM ###"
140 GOSUB 1170: TEXT: HOME: GOSUB
  1180
150 VTAB 12: HTAB 10: PRINT "WAN
  T INSTRUCTIONS?": GOSUB 110
  0: IF X = 217 THEN PRINT B$
  : GOSUB 1040
160 TEXT: HOME: VTAB 10: HTAB
  7: PRINT "I CAN PLAY AT DIFF
  ERENT LEVELS OF": HTAB 7: PRINT
  "SKILL. TELL ME IF YOU ARE:"
  : PRINT
170 HTAB 7: PRINT "1) A BEGINNER
  ": HTAB 7: PRINT "2) AN INTE
  RMEDIATE PLAYER": HTAB 7: PRINT
  "3) AN ADVANCED PLAYER": PRINT
  : HTAB 7: PRINT "ENTER 1, 2,
  OR 3: "B$:
180 GET A$: FOR DF = 1 TO 3: IF
  A$ = STR$(DF) THEN PRINT
  B$: GOTO 200
190 NEXT I: GOTO 180

```

SUPER NIM



```

200 HOME : VTAB 12: HTAB 7: PRINT
    "ENTER # OF SECTIONS (2-6):"
    "I"
210 GET A#: FOR MX = 2 TO 6: IF
    A# = STR# (MX) THEN PRINT
    B#: HOME : GOTO 230
220 NEXT : GOTO 210
230 FOR J = 3 TO 6: S(J) = 0: NEXT
    J: MV = 0: S(1) = 63: FOR J = 3
    TO MX: S(J) = FN R(19) + 45
    : NEXT : IF MX = 2 THEN S(3)
    = 0
240 MV = FN R(42) + 10: FOR J =
    1 TO 15: IF MV = MT(J) THEN
    240
250 NEXT : S(2) = 63 - MV: MV = 0:
    GOSUB 680
260 HOME : HTAB 11: PRINT "WANT
    TO GO FIRST?" : GOSUB 1140
270 GET A#: IF A# = "Y" THEN 300
280 IF A# = "N" THEN 490
290 GOTO 270
300 HOME : HTAB 13: PRINT "IT'S
    YOUR TURN." : B#
310 FOR I = 1 TO MX: IF TB(I) =
    TB THEN FOR P = 1 TO 1000: NEXT
    : PRINT : HTAB 3: PRINT "I G
    UESS YOU WILL CHOOSE SECTION
    "I" : B#B#: FOR P = 1 TO 45
    00: NEXT : GOTO 360
320 NEXT : PRINT : HTAB 4: PRINT
    "ENTER SECTION #, OR Q FOR Q
    UIT:" : J
330 GET A#: IF A# = "Q" THEN TEXT
    : HOME : CLEAR : GOTO 920
340 FOR I = 1 TO MX: IF A# = STR#
    (I) AND S(I) THEN PRINT B#:
    GOTO 360
350 NEXT : GOTO 330
360 CS# = "": FOR B = 5 TO 0 STEP
    - 1: IF SB(I,B) THEN CS# =
    CS# + STR# (6 - B) + " ": GOTO
    380

```

```

370 CS# = CS# + ". "
380 NEXT : POKE 34,15: HOME : HTAB
    18: PRINT LEFT# (CS#,6): HTAB
    18: PRINT MID# (CS#,7,6)
390 IF TB(I) = 1 THEN PRINT : HTAB
    2: PRINT "NOT MUCH CHOICE! I
    'LL MOVE FOR YOU." : B#B#: GOSUB
    1170: MV = S(I): S(I) = 0: GOSUB
    680: GOTO 470
400 PRINT : PRINT "THE PIECES IN
    SECTION "I" ARE SHOWN ABO
    VE." : POKE 34,20
410 PRINT "ENTER YOUR MOVE AS 1-
    3 ADJACENT DIGITS": INPUT "I
    N ASCENDING ORDER, & HIT 'RE
    TURN':" : A#: IF LEFT# (A#,1)
    = "Q" THEN TEXT : HOME : CLEAR
    : GOTO 920
420 FOR J = 1 TO 15: IF LM#(J) =
    A# THEN GOSUB 820: GOTO 450
430 NEXT
440 HOME : FLASH : HTAB 5: PRINT
    "THAT MOVE DOES NOT COMPUTE!

```

```

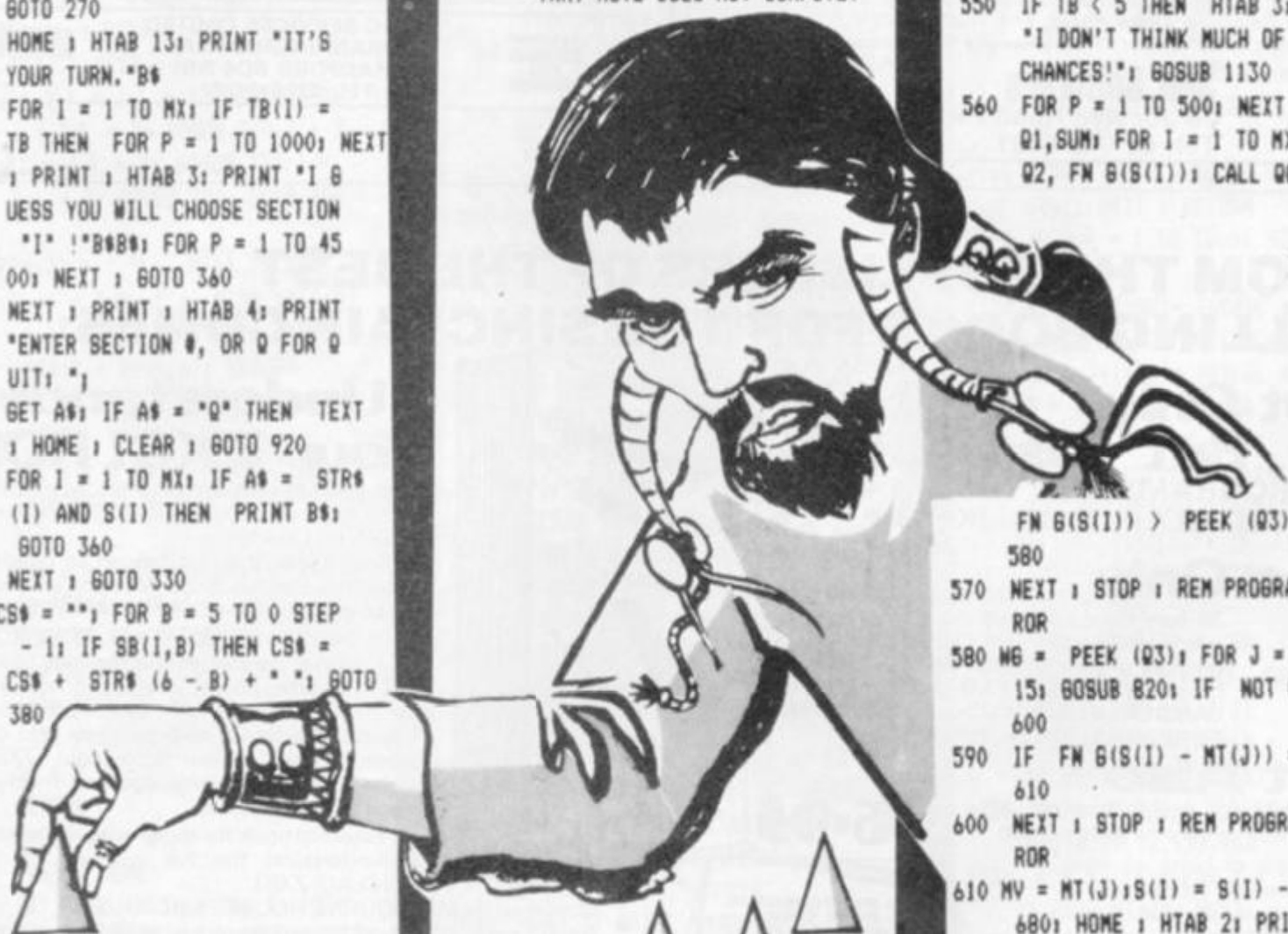
1140: FOR P = 1 TO 2000: NEXT
    : IF TB = 0 THEN 840
480 MV = 0: GOSUB 680
490 HOME : HTAB 14: PRINT "IT'S
    MY TURN." : B#: PRINT : FOR P =
    1 TO 1500: NEXT : IF TB < 5 OR
    DF = 3 THEN 510
500 IF DF = 1 OR ( RND (1) ) > .5 AND
    TB > 7) THEN 640
510 POKE QL,QX: POKE Q3, FN 6(S(
    1)): FOR J = 2 TO MX: POKE Q
    1, PEEK (Q3): POKE Q2, FN 6(
    S(J)): CALL QB: NEXT J: SUM =
    PEEK (Q3)
520 IF NOT SUM AND TB < 5 THEN
    FOR P = 1 TO 1000: NEXT : FLASH
    : HOME : VTAB 15: HTAB 15: PRINT
    "I GIVE UP!" : GOSUB 1160: GOSUB
    1170: NORMAL : GOTO 840
530 IF NOT SUM THEN 640
540 IF TB < 3 THEN HTAB 3: PRINT
    "SORRY ABOUT THIS NEXT MOVE,
    BUT..." : GOSUB 1120: GOTO 5
    60
550 IF TB < 5 THEN HTAB 3: PRINT
    "I DON'T THINK MUCH OF YOUR
    CHANCES!" : GOSUB 1130
560 FOR P = 1 TO 500: NEXT : POKE
    Q1,SUM: FOR I = 1 TO MX: POKE
    Q2, FN 6(S(I)): CALL QB: IF

```

```

    FN 6(S(I)) > PEEK (Q3) THEN
    580
570 NEXT : STOP : REM PROGRAM ER
    ROR
580 W6 = PEEK (Q3): FOR J = 1 TO
    15: GOSUB 820: IF NOT OK THEN
    600
590 IF FN 6(S(I) - MT(J)) = W6 THEN
    610
600 NEXT : STOP : REM PROGRAM ER
    ROR
610 MV = MT(J): S(I) = S(I) - MV: GOSUB
    680: HOME : HTAB 2: PRINT "I
    'VE REMOVED "TM" PIECE": IF
    TM > 1 THEN PRINT "S"
620 PRINT " FROM SECTION "I": GOSUB
    1140: FOR P = 1 TO 2000: NEXT
    : IF TB = 0 THEN 1030
630 MV = 0: GOSUB 680: GOTO 300
640 FOR P = 1 TO 1000: NEXT
650 I = FN R(MX) + 1: IF NOT S(
    I) THEN 650

```



SUPER NIM

```

    "NORMAL : PRINT : GOSUB 11
    60: GOTO 410
450 IF NOT OK THEN 440
460 MV = MT(J): S(I) = S(I) - MV: GOSUB
    680
470 HOME : HTAB 6: PRINT "YOUR M
    OVE IS DISPLAYED ABOVE." : GOSUB

```

```

660 J = FN R(13) + 1: GOSUB 820:
    IF NOT OK THEN 660
670 GOTO 610
680 TB = 0: FOR J = 1 TO 6: TB(J) =
    0: TX = S(J): FOR B = 0 TO 5:
    T = TX / 2: TX = T: SB(J,B) =
    SGN (T - TX): TB(J) = TB(J) +
    SB(J,B): NEXT TB: TB = TB + TB(
    J): NEXT J: IF NOT MV THEN 7
    00
690 TM = 0: TX = MV: FOR B = 0 TO
    5: T = TX / 2: TX = T: MB(B) =
    SGN (T - TX): TM = TM + MB(B
    ): NEXT
700 FOR J = 1 TO 6: ST(J) = "": FOR
    B = 5 TO 0 STEP - 1: IF J <
    > 1 THEN 730
710 IF NOT MV THEN 730
720 IF MB(B) THEN ST(J) = ST(J)
    ) + "0 ": GOTO 750
730 IF SB(J,B) THEN ST(J) = ST(
    J) + "X ": GOTO 750
740 ST(J) = ST(J) + ". "
750 NEXT J: NEXT
760 J = 2: K = 1: L = 1: GOSUB 770:
    J = 3: L = 7: GOSUB 770: J = 7
    : K = 4: L = 1: GOSUB 770: J =
    8: L = 7: GOSUB 770: GOTO 780

770 PR(J) = " " + MID$(ST(K),
    L,6) + " " + MID$(ST(K
    + 1),L,6) + " " + MID$(
    ST(K + 2),L,6): RETURN
780 TEXT: HOME: VTAB 2: IF MX <
    4 THEN VTAB 5
790 FOR J = 0 TO 4: PRINT TAB(
    7): PR(J): NEXT J: IF MX < 4 THEN
    810
800 FOR J = 5 TO 10: PRINT TAB(
    7): PR(J): NEXT
810 POKE 34,15: RETURN
820 OK = 0: POKE QL,QA: POKE Q1,S
    (1): POKE Q2,MT(J): CALL QB:
    IF PEEK(Q3) = MT(J) THEN
    OK = 1
830 RETURN
840 CLEAR MW = 5
850 TEXT: HOME
860 IF PEEK(175) + 256 & PEEK
    (176) < 8157 THEN HQR: GOTO
    890
870 VTAB 12: HTAB 15: IF W = 5 THEN
    PRINT "YOU WIN!": GOTO 910
880 PRINT "I WIN!": GOTO 910
890 ROT = 0: SCALE = 8: GOSUB 980:
    GOSUB 990: GOSUB 1010: GOSUB
    980: FOR I = 8 TO 1 STEP -
    1: SCALE = 1: GOSUB 940: NEXT

```

```

900 SCALE = 8: GOSUB 990: FOR I =
    1 TO 32 STEP 4: ROT = 1: GOSUB
    950: NEXT I: ROT = 32: GOSUB 9
    90: ROT = 0: FOR I = 1 TO 8:
    SCALE = 1: GOSUB 960: NEXT I:
    GOSUB 1000
910 FOR I = 1 TO 5: PRINT CHR$(
    7): NEXT I: FOR I = 1 TO 300
    0: NEXT
920 GOSUB 1110: VTAB 21: PRINT "
    WANT TO PLAY ANOTHER GAME? "
    : GET A$: IF A$ = "Y" THEN
    FOR I = 770 TO 906: READ J:
    NEXT J: TEXT: HOME: GOSUB
    1180: GOTO 160
930 TEXT: HOME: VTAB 11: HTAB
    7: PRINT "IT'S BEEN FUN PLAY
    ING WITH YOU.": PRINT: HTAB
    7: PRINT "SO LONG UNTIL NEXT
    TIME!": PRINT CHR$(7): END
940 GOSUB 980: GOSUB 970: GOSUB
    980: RETURN
950 GOSUB 990: GOSUB 970: GOSUB
    990: RETURN
960 GOSUB 1000: GOSUB 970: GOSUB
    1000: RETURN
970 FOR J = 1 TO 5: K = PEEK ( -
    16336): NEXT J: RETURN
980 XDRAW 2 AT 140,60: RETURN
990 XDRAW 3 AT 140,100: RETURN
1000 XDRAW W AT 140,60: RETURN
1010 FOR I = 1 TO 3: FOR J = 100
    TO 30 STEP - 10: K = 5: GOSUB
    1020: NEXT J: FOR J = 30 TO 1
    00 STEP 10: K = 5: GOSUB 1020
    : NEXT J: NEXT I: RETURN
1020 POKE 768,J: POKE 769,K: CALL
    770: RETURN
1030 CLEAR MW = 4: GOTO 850
1040 HOME: HTAB 5: PRINT "IN TH
    IS GAME, YOU AND I TAKE": PRINT
    "TURNS REMOVING PIECES FROM
    A DISPLAY": PRINT "SHOWN ON
    THE SCREEN. FROM 1-3 PIECES"
1050 PRINT "MAY BE REMOVED AT EA
    CH TURN, BUT IF": PRINT "2 O
    R 3, THEY MUST BE ADJACENT E
    ITH": PRINT "HORIZONTALLY
    OR VERTICALLY.": PRINT
1060 HTAB 5: PRINT "WHEN IT IS Y
    OUR TURN TO PLAY, CHOOSE": PRINT
    "FIRST THE SECTION OF THE DI
    SPLAY WHERE": PRINT "YOU WIS
    H TO MOVE, AND THEN SPECIFIC
    ": PRINT "PIECES, WHICH YOU
    CAN PICK BY NUMBER.": PRINT
1070 HTAB 5: PRINT "THE PLAYER W
    HO TAKES THE LAST PIECE": PRINT
    "OF THE ENTIRE DISPLAY WINS
    THE GAME.": PRINT: HTAB 5: PRINT
    "YOU CAN VARY MY LEVEL OF SK
    ILL,"

```

```

1080 PRINT "AND CAN ALSO VARY TH
    E INITIAL NUMBER": PRINT "OF
    SECTIONS, FROM 2 TO 6. YOU
    HAVE": PRINT "YOUR CHOICE, A
    FTER SEEING THE INITIAL": PRINT
    "DISPLAY, OF GOING FIRST OR
    SECOND."
1090 PRINT "THEORETICALLY, YOU C
    AN WIN EVERY GAME!": PRINT:
    GOSUB 1170: PRINT "HIT ANY
    KEY WHEN YOU ARE READY TO PL
    AY.": GOSUB 1110
1100 X = RND(1): X = PEEK ( - 1
    6384): IF X < 128 THEN 1100
1110 POKE - 16368,0: RETURN
1120 POKE PI,255: POKE DU,190: CALL
    BE: FOR PA = 1 TO 50: NEXT J:
    POKE DU,127: CALL BE: POKE
    PI,190: POKE DU,255: CALL BE
    : RETURN
1130 POKE PI,180: FOR K = 1 TO 3
    : POKE DU,75: CALL BE: FOR P
    A = 1 TO 50: NEXT J: NEXT J: POKE
    PI,228: POKE DU,255: CALL BE
    : RETURN
1140 FOR I = 1 TO 8: J = 240 / I:
    POKE PI,J: POKE DU,I: CALL
    BE: NEXT I: RETURN
1150 POKE PI,230: POKE DU,255: CALL
    BE: RETURN
1160 FOR K = 1 TO 300: L = PEEK
    (CL): NEXT J: RETURN
1170 FOR P = 1 TO 3000: NEXT J: RETURN
1180 PI = 768: DU = 769: BE = 770: C
    L = - 16336: B$ = CHR$(7):
    QB = 791: Q1 = 792: QL = 793: Q
    2 = 794: Q3 = 799: QA = 41: QX =
    73
1190 B$ = "0112102312030334102301
    3223303215100323340312302123
    31320534254152": IF LEN(B$
    ) < > 64 THEN STOP: REM E
    NTRY ERROR
1200 DEF FN B(J) = VAL ( MID$(
    B$,J + 1,1)): DEF FN R(J) =
    INT ( RND(1) & J)
1210 DIM LM$(15): FOR J = 1 TO 1
    5: READ LM$(J): NEXT
1220 DATA 1,2,3,4,5,6,12,23,45,
    56,14,25,36,123,456
1230 DIM MT(15): FOR J = 1 TO 15
    : READ MT(J): NEXT
1240 DATA 32,16,8,4,2,1,48,24,6
    ,3,36,18,9,56,7
1250 PR$(0) = " 1 2
    3: PR$(10) = " 4
    5 6"
1260 PR$(1) = " 8
    9: PR$(4) = PR$(1): PR$(6) =
    PR$(1): PR$(9) = PR$(1): PR$(5
    ) = "*****"
    *****: RETURN

```