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10 ' THE CUBE
20 'DAVID MUIR
30 '    1986
40 GOTO 800
50 TAG:ON n GOSUB 530,530,530,570,570,57
0,610,610,610,660,660,660,700,700,700,74
0,740,740:RETURN
60 SOUND 7,400,10,3:WHILE INKEY$="":WEND
:RETURN
70 q$="":WHILE INKEY$<>"":WEND:SOUND 7,4
00,10,3:WHILE q$="":q$=UPPER$(INKEY$):WE
ND:RETURN
80 q$="":WHILE INKEY$<>"":WEND:SOUND 7,4
0,10,3:WHILE q$="":q$=INKEY$:WEND:RETURN
90 ' ***** SET UP *****
100 DEFINT a-z:DEFSTR q
110 MODE 0:BORDER 26:INK 0,26:INK 7,0:PA
PER 0:PEN 1:INK 1,1:INK 2,24:INK 3,7:INK
 4,9:INK 5,15:INK 6,21:CLS:WINDOW#1,1,20
,20,25:PAPER#1,0:PEN#1,7:CLS#1
120 SYMBOL 255,24,60,126,255,255,126,60,
24:SYMBOL 254,0,0,32,48,56,60,60,60:SYMB
OL 253,60,60,60,60,28,12,4,0:SYMBOL 252,
0,0,4,12,28,60,60,60:SYMBOL 251,60,60,60
,60,56,48,32,0
130 DIM fa(5,2,2),pl(5,2,2,2),rec(150),h
o(2)
140 FOR i=0 TO 5:FOR j=0 TO 2:FOR k=0 TO
 2:fa(i,j,k)=i+1:NEXT:NEXT:NEXT
150 RESTORE 870:FOR i=0 TO 5:FOR j=0 TO
2:FOR k=0 TO 2:FOR l=0 TO 1:READ pl(i,j,
k,l):NEXT:NEXT:NEXT:NEXT
160 TAG:FOR i=0 TO 5:FOR j=0 TO 2:FOR k=
0 TO 2:PLOT 0,400,fa(i,j,k):FOR l=0 TO 1
:MOVE pl(i,j,k,0),pl(i,j,k,1):PRINT CHR$
(255+(i=1 OR i=4)+3*(i=2 OR i=5));:MOVE
pl(i,j,k,0),pl(i,j,k,1)-16
170 IF i=1 OR i=4 THEN PRINT CHR$(253);:
ELSE IF i=2 OR i=5 THEN PRINT CHR$(251);
180 NEXT:NEXT:NEXT:NEXT:TAGOFF:LOCATE 12
,1:PRINT "(BACK)"
190 TAG:PLOT 0,0,7:FOR j=0 TO 8:FOR i=0
TO 1:READ x,y:MOVE x,y:PRINT CHR$(65+j-3
2*(i=1));:NEXT:NEXT:TAGOFF
200 ' ***** SET UP OPTIONS *****
210 q$="":f=0:CLS#1:PRINT#1,"PLAYER SET
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UP (P)":PRINT#1,"OR COMPUTER   (C) ?"
220 GOSUB 70:IF q$="P" THEN 360 ELSE IF
q$<>"C" THEN 220
230 ' ***** COMPUTER SET UP *****
240 CLS#1:PRINT#1,"ENTER NO. TWISTS":PRI
NT#1,"(1-50)":INPUT#1,q$:IF q$=""THEN 24
0 ELSE IF LEN(q$)>2 THEN 240:ELSE k=0:FO
R i=1 TO LEN(q$):k=k+(MID$(q$,i,1)>"9"OR
 MID$(q$,i,1)<"0"):NEXT:IF k<>0 THEN 240
 ELSE c=VAL(q$):IF c=0 OR c>50 THEN 240
250 FOR h=1 TO c:CLS#1:ff=INT(RND*9)+65+
32*INT(RND*2):n=ff-64+23*(ff>73):rec(f)=
ff-32*(ff<74)+32*(ff>73):TAGOFF:PRINT#1,
h;" (";CHR$(ff);")";:TAG:f=f+1
260 GOSUB 50
270 GOSUB 60:TAGOFF:NEXT
280 ' ***** SOLVE OPTIONS *****
290 CLS#1:PRINT#1,"COMPUTER SOLVE (C)":P
RINT#1,"OR PLAYER (P) ?"
300 GOSUB 70:IF q$="P" THEN 420 ELSE IF
q$<>"C" THEN 300
310 ' ***** COMPUTER SOLVE *****
320 IF pf THEN PRINT#1,"RESETTING":TAG:F
OR e=f-1 TO w STEP -1:n=rec(e)-64+23*(re
c(e)>73):GOSUB 50:NEXT:TAGOFF:f=w:pf=0:C
LS#1:PRINT#1,"START":GOSUB 60:GOTO 290
330 FOR e=f-1 TO 0 STEP -1:CLS#1:PRINT#1
,e+1;" (";CHR$(rec(e));")";:n=rec(e)-64+
23*(rec(e)>73):GOSUB 60:GOSUB 50
340 TAGOFF:NEXT:PRINT#1:PRINT#1:PRINT#1,
"PRESS KEY":PRINT#1,"TO RESTART";:GOSUB
60:GOTO 210
350 '***** PLAYER SET UP *****
360 CLS#1:LOCATE 1,17:PRINT"(S) TO SOLVE
"
370 IF f=50 THEN CLS#1:PRINT#1,"SET UP L
IMIT":PRINT#1,"NOW SOLVE":GOSUB 60:LOCAT
E 1,17:PRINT SPACE$(12):GOTO 290
380 GOSUB 80:IF UPPER$(q$)="S" THEN LOCA
TE 1,17:PRINT SPACE$(12):GOTO 290:ELSE I
F q$<"A" OR q$>"i" THEN 380 ELSE IF q$>"
I" THEN IF q$<"a" THEN 380
390 n=ASC(q$)-64+23*(q$>"I"):rec(f)=ASC(
q$)+32*(q$>"I")-32*(q$<"a"):TAGOFF:CLS#1
:PRINT#1,f+1;" (";q$;")";:GOSUB 50:
400 q$="":f=f+1:TAGOFF:GOTO 370
410 ' ***** PLAYER SOLVE *****
420 pf=-1:w=f:CLS#1:LOCATE 1,17:PRINT"(Q
) QUIT:(R) RESET"
430 IF f=150 THEN CLS#1:PRINT#1,"LIMIT R
EACHED":GOSUB 70:IF q$="Q" THEN CLS:END:
ELSE LOCATE 1,17:PRINT SPACE$(18):CLS#1:
GOTO 320
440 GOSUB 80:IF UPPER$(q$)="Q"THEN CLS:E
ND:ELSE IF UPPER$(q$)="R"THEN LOCATE 1,1
7:PRINT SPACE$(18):CLS#1:GOTO 320:ELSE I
F q$<"A" OR q$>"i" THEN 440 ELSE IF q$>"
I" THEN IF q$<"a" THEN 440
450 n=ASC(q$)-64+23*(q$>"I"):rec(f)=ASC(
q$)+32*(q$>"I")-32*(q$<"a"):TAGOFF:CLS#1
:PRINT#1,f+1;" (";q$;")";:GOSUB 50:TAGOF
F
460 f=f+1:GOSUB 490:IF NOT cf THEN 430 E
LSE cf=0:CLS#1:PRINT#1,"CONGRATULATIONS!
":FOR i=150 TO 30 STEP -20:SOUND 7,i,50,
7:FOR j=1 TO 50:NEXT:NEXT:f=0:GOSUB 70
470 CLS#1:PRINT#1,"ANOTHER GO (Y/N) ?":G
OSUB 70:IF q$="Y" THEN CLS#1:LOCATE 1,17
:TAGOFF:PRINT SPACE$(18):GOTO 210:ELSE I
F q$<>"N" THEN 470 ELSE CLS:END
480 ' ***** FINISHED CHECK *****
490 cf=-1:FOR i=0 TO 3:FOR j=0 TO 2:FOR
k=0 TO 2
500 IF fa(i,j,k)<>fa(i,0,0) THEN cf=0
510 NEXT:NEXT:NEXT:RETURN
520 ' ***** SINGLE TWISTS *****
530 FOR i=0 TO 2:ho(i)=fa(0,n-1,i):fa(0,
n-1,i)=fa(2,i,3-n):fa(2,i,3-n)=fa(3,2-i,
n-1):fa(3,2-i,n-1)=fa(4,2-i,n-1):fa(4,2-
i,n-1)=ho(i):NEXT:FOR i=0 TO 2:PLOT 0,40
0,fa(0,n-1,i)
540 MOVE pl(0,n-1,i,0),pl(0,n-1,i,1):PRI
NT CHR$(255);:PLOT 0,400,fa(2,i,3-n):MOV
E pl(2,i,3-n,0),pl(2,i,3-n,1):PRINT CHR$
(252);:MOVE pl(2,i,3-n,0),pl(2,i,3-n,1)-
16:PRINT CHR$(251);:PLOT 0,400,fa(3,2-i,
n-1)
550 MOVE pl(3,2-i,n-1,0),pl(3,2-i,n-1,1)
:PRINT CHR$(255);:PLOT 0,400,fa(4,2-i,n-
1):MOVE pl(4,2-i,n-1,0),pl(4,2-i,n-1,1):
PRINT CHR$(254);:MOVE pl(4,2-i,n-1,0),pl
(4,2-i,n-1,1)-16:PRINT CHR$(253);
560 NEXT:RETURN: REM   ABC
570 FOR i=0 TO 2:ho(i)=fa(0,i,n-4):fa(0,
i,n-4)=fa(1,i,n-4):fa(1,i,n-4)=fa(3,n-4,
2-i):fa(3,n-4,2-i)=fa(5,2-i,6-n):fa(5,2-
i,6-n)=ho(i):NEXT:FOR i=0 TO 2:PLOT 0,40
0,fa(0,i,n-4)
580 MOVE pl(0,i,n-4,0),pl(0,i,n-4,1):PRI
NT CHR$(255);:PLOT 0,400,fa(1,i,n-4):MOV
E pl(1,i,n-4,0),pl(1,i,n-4,1):PRINT CHR$
(254);:MOVE pl(1,i,n-4,0),pl(1,i,n-4,1)-
16:PRINT CHR$(253);:PLOT 0,400,fa(3,n-4,
2-i)
590 MOVE pl(3,n-4,2-i,0),pl(3,n-4,2-i,1)
:PRINT CHR$(255);:PLOT 0,400,fa(5,2-i,6-
n):MOVE pl(5,2-i,6-n,0),pl(5,2-i,6-n,1):
PRINT CHR$(252);:MOVE pl(5,2-i,6-n,0),pl
(5,2-i,6-n,1)-16:PRINT CHR$(251);
600 NEXT:RETURN: REM   DEF
610 FOR i=0 TO 2:ho(i)=fa(1,n-7,i):fa(1,
n-7,i)=fa(2,n-7,i):fa(2,n-7,i)=fa(5,n-7,
i):fa(5,n-7,i)=fa(4,n-7,i):fa(4,n-7,i)=h
o(i):NEXT:FOR i=0 TO 2:PLOT 0,400,fa(1,n
-7,i)
620 MOVE pl(1,n-7,i,0),pl(1,n-7,i,1):PRI
NT CHR$(254);:MOVE pl(1,n-7,i,0),pl(1,n-
7,i,1)-16:PRINT CHR$(253);:PLOT 0,400,fa
(2,n-7,i):MOVE pl(2,n-7,i,0),pl(2,n-7,i,
1):PRINT CHR$(252);
630 MOVE pl(2,n-7,i,0),pl(2,n-7,i,1)-16:
PRINT CHR$(251);:PLOT 0,400,fa(5,n-7,i):
MOVE pl(5,n-7,i,0),pl(5,n-7,i,1):PRINT C
HR$(252);:MOVE pl(5,n-7,i,0),pl(5,n-7,i,
1)-16:PRINT CHR$(251);:PLOT 0,400,fa(4,n
-7,i)
640 MOVE pl(4,n-7,i,0),pl(4,n-7,i,1):PRI
NT CHR$(254);:MOVE pl(4,n-7,i,0),pl(4,n-
7,i,1)-16:PRINT CHR$(253);
650 NEXT:RETURN: REM   GHI
660 FOR i=0 TO 2:ho(i)=fa(0,n-10,i):fa(0
,n-10,i)=fa(4,2-i,n-10):fa(4,2-i,n-10)=f
a(3,2-i,n-10):fa(3,2-i,n-10)=fa(2,i,12-n
):fa(2,i,12-n)=ho(i):NEXT:FOR i=0 TO 2:P
LOT 0,400,fa(0,n-10,i)
670 MOVE pl(0,n-10,i,0),pl(0,n-10,i,1):P
RINT CHR$(255);:PLOT 0,400,fa(4,2-i,n-10
):MOVE pl(4,2-i,n-10,0),pl(4,2-i,n-10,1)
:PRINT CHR$(254);:MOVE pl(4,2-i,n-10,0),
pl(4,2-i,n-10,1)-16:PRINT CHR$(253);
680 PLOT 0,400,fa(3,2-i,n-10):MOVE pl(3,
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2-i,n-10,0),pl(3,2-i,n-10,1):PRINT CHR$(
255);:PLOT 0,400,fa(2,i,12-n):MOVE pl(2,
i,12-n,0),pl(2,i,12-n,1):PRINT CHR$(252)
;:MOVE pl(2,i,12-n,0),pl(2,i,12-n,1)-16:
PRINT CHR$(251);
690 NEXT:RETURN: REM   abc
700 FOR i=0 TO 2:ho(i)=fa(1,i,n-13):fa(1
,i,n-13)=fa(0,i,n-13):fa(0,i,n-13)=fa(5,
2-i,15-n):fa(5,2-i,15-n)=fa(3,n-13,2-i):
fa(3,n-13,2-i)=ho(i):NEXT:FOR i=0 TO 2:P
LOT 0,400,fa(1,i,n-13)
710 MOVE pl(1,i,n-13,0),pl(1,i,n-13,1):P
RINT CHR$(254);:MOVE pl(1,i,n-13,0),pl(1
,i,n-13,1)-16:PRINT CHR$(253);:PLOT 0,40
0,fa(0,i,n-13):MOVE pl(0,i,n-13,0),pl(0,
i,n-13,1):PRINT CHR$(255);:PLOT 0,400,fa
(5,2-i,15-n)
720 MOVE pl(5,2-i,15-n,0),pl(5,2-i,15-n,
1):PRINT CHR$(252);:MOVE pl(5,2-i,15-n,0
),pl(5,2-i,15-n,1)-16:PRINT CHR$(251);:P
LOT 0,400,fa(3,n-13,2-i):MOVE pl(3,n-13,
2-i,0),pl(3,n-13,2-i,1):PRINT CHR$(255);
730 NEXT:RETURN: REM   def
740 FOR i=0 TO 2:ho(i)=fa(2,n-16,i):fa(2
,n-16,i)=fa(1,n-16,i):fa(1,n-16,i)=fa(4,
n-16,i):fa(4,n-16,i)=fa(5,n-16,i):fa(5,n
-16,i)=ho(i):NEXT:FOR i=0 TO 2:PLOT 0,40
0,fa(2,n-16,i)
750 MOVE pl(2,n-16,i,0),pl(2,n-16,i,1):P
RINT CHR$(252);:MOVE pl(2,n-16,i,0),pl(2
,n-16,i,1)-16:PRINT CHR$(251);:PLOT 0,40
0,fa(1,n-16,i):MOVE pl(1,n-16,i,0),pl(1,
n-16,i,1):PRINT CHR$(254);
760 MOVE pl(1,n-16,i,0),pl(1,n-16,i,1)-1
6:PRINT CHR$(253);:PLOT 0,400,fa(4,n-16,
i):MOVE pl(4,n-16,i,0),pl(4,n-16,i,1):PR
INT CHR$(254);:MOVE pl(4,n-16,i,0),pl(4,
n-16,i,1)-16:PRINT CHR$(253);:PLOT 0,400
,fa(5,n-16,i)
770 MOVE pl(5,n-16,i,0),pl(5,n-16,i,1):P
RINT CHR$(252);:MOVE pl(5,n-16,i,0),pl(5
,n-16,i,1)-16:PRINT CHR$(251);
780 NEXT:RETURN: REM   ghi
790 ' ***** TITLE/INSTRUCTIONS *****
800 MODE 0:BORDER 1:INK 0,1:INK 1,24:CLS
:FOR i=3 TO 11:LOCATE i,i:PRINT "THE CUB
E":NEXT:LOCATE 4,25:PRINT "instructions
?";
810 GOSUB 70:IF q$="N" THEN 100 ELSE IF
q$<>"Y" THEN 810:ELSE MODE 1:CLS:PRINT "
INSTRUCTIONS":PRINT
820 PRINT " This is a simulation of the
famous cubepuzzle.You see a view of thre
e faces anda view of the hidden three fa
ces as seenfrom behind.
830 PRINT:PRINT " You or the computer se
t the puzzle withup to 50 'twists'.  The
n the computer oryou solve it in up to 1
00 twists. If youget stuck or fail,the c
omputer will takeyou back to the start
for another go orsolve it for you.
840 PRINT:PRINT "Twists are entered as l
etters - small toturn one way and large
to turn the other
850 PRINT:PRINT:PRINT:PRINT:PRINT "PRESS
 ANY KEY":GOSUB 70:GOTO 100
860 ' ***** DATA PRINT POSITIONS *****
870 DATA 200,360,232,344,264,328,168,344
,200,328,232,312,136,328,168,312,200,296
,120,310,152,292,184,278,120,278,152,262
,184,246,120,246,152,230,184,214,216,278
,248,294,280,310,216,246,248,262,280,278
,216,214,248,230,280,246
880 DATA 432,264,464,248,496,232,400,248
,432,232,464,216,368,232,400,216,432,200
,448,366,480,348,512,334,448,334,480,318
,512,302,448,302,480,286,512,268,352,334
,384,350,416,366,352,302,384,318,416,334
,352,270,384,286,416,302
890 DATA 168,376,284,206,136,360,252,190
,104,344,220,174,232,376,124,206,264,360
,156,190,296,344,188,174,88,306,312,306,
88,274,312,274,88,241,312,241
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