

**TRS-80**  
**COMPUTING**  
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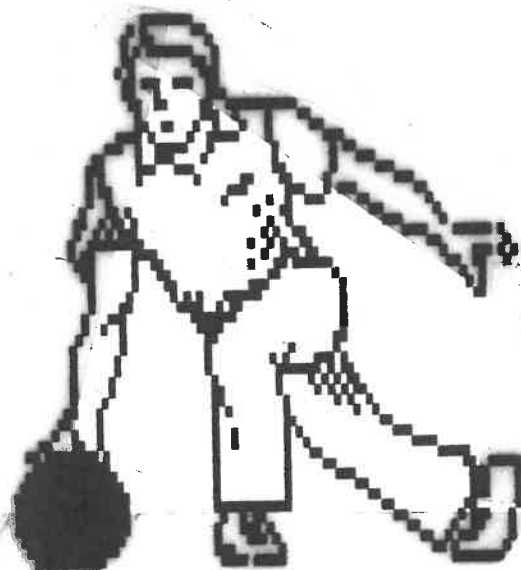
# TRS-80 COMPUTING

**ANNIVERSARY ISSUE!**

**GAMES ISSUE!**

THE BI-MONTHLY MAGAZINE FOR COLOR COMPUTER USERS

## HAPPY ANNIVERSARY!!



ALMOST 30 PAGES FILLED WITH  
EXCITING ARCADE GAMES AND  
INTERESTING ARTICLES!

- \* A BOWLING PROGRAM
- \* TIC-TAC-TOE
- \* GREAT NEW RELEASES FROM  
TRS-80 COMPUTING SOFTWARE
- \* SOFTWARE REVIEW ON  
COCOMAN II

AND MUCH, MUCH MORE!!

ORIGINAL PROGRAMS FOR:  
TANDY COCO/APPLE/C64/128

INTERESTING ARTICLES FOR:  
TANDY COCO COMPUTER

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TRS-80 COMPUTING



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TRS-80 COMPUTING

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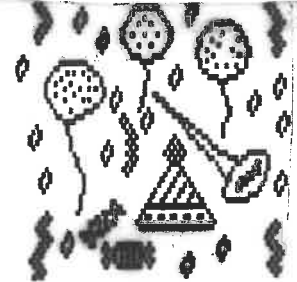
NOTE: "TC" STANDS FOR TRS-80 COMPUTING, AND "A" STANDS FOR APPLE.

# HAPPY ANNIVERSARY!

## GRAPHICS PROGRAM-#13

This is our second year of printing TRS-80 Computing. We put out our first issue in June of 1987, and since then we've been getting bigger and better. This month's graphics program displays a anniversary scene with a few notes from "Auld Lang Syne" and a couple of others.

THE PROGRAM: ANNIVERSARY



```

1  ANNIVERSARY
2  BY JOE AHERN
3  MUSIC BY VAL BURKE
4  ECB REQUIRED
5  PMODE3,1:PCLS:SCREEN1,1:CLEAR500:GOSUB100
10  CIRCLE(64,96),16,6:CIRCLE(204,96),16,6:DRAW"C6;BM64,110;D16G4D6"
12  DRAW"BM204,110;D16G4D6":PAINT(64,96),6,6:PAINT(204,104),6,6
14  DRAW"C7;BM134,84;D6G4D20U20G8D12U12G6D6U6G6R48BL48D6R48U6H6D6U6H6D12U12H8D20U
20H4U6L2"
15  DIM W(10,10),V(10,10)
16  GET(45,75)-(82,160),W,G
18  GET(185,75)-(225,160),V,G
20  FOR I=-20 TO -1 STEP -1
22  PUT(45,75+I)-(82,160+I),W,PSET
24  PUT(185,75+I)-(225,160+I),V,PSET:NEXTI
30  FORT=1T050
32  X=RND(254):Y=RND(191):Z$="BM"+STR$(X)+",""+STR$(Y)+";U2D4U2L2R4"
34  DRAWZ$:NEXTT
40  LINE(80,8)-(180,24),PRESET,BF
42  DRAW"C8;BM105,24"+H$+A$+P$+P$+Y$
44  LINE(70,152)-(200,164),PRESET,BF
46  DRAW"BM70,164"+A$+N$+N$+I$+V$+E$+R$+S$+A$+R$+Y$+"U1BU2U5"
50  FORP=1 TO 400:NEXT P:FOR X=1 TO 4
52  PLAY"01T2L16GL8G+L16AL16A+P16O2L16B-P8L8.B-"
54  NEXTX
56  PLAY"P16O2T2L8B-P16P32O3L2E-L8DP16P32L4E-P8L4GP8L8FL8GL8E-L8FL8GL8E-L8FP8L32F
L32F+L16GP16L32E-L32EL16FP16L32D-L32DL2E-P16L8E-P16L4GP8L4B-P8T504L16CO3L16BO4L1
6CO3L16BO4L16CO3L16BO4L16CO3L16BO4L16CO3L16BO4L16CO3L16BO4L16CO3L16BO4L1C"
58  PLAY"P2P4T204L8E-P403L2B-P9L8GP16L8.GP7L8E-05P4L4.FP8L8E-L8FP16O1L4G03L8GP16L
8F04L2E-L8CP16L4CO3P8L8B-P404L2E-P401L2E-"
60  FORP=1TO400:NEXTP:CLS:END
100  A$="U8R8D4L8BR8D4BR4"
101  E$="U8R8BD4L8BD4R8BR4"
102  H$="U8BR8D8BU4L8BD4BR12"
104  I$="BU8R8BL4D8BL4R8BR4"
106  N$="U8F8U8BD8BR4"
108  P$="U8R8D4L8BD4BR12"
110  R$="U8R8D4L8BR4F4BR4"
112  S$="BU4U4R8BD4L8BR8D4L8BR12"
114  V$="BU8D4F4E4U4BD8BR4"
116  Y$="BR4U4H4F4E4G4D4BR8"
120  RETURN

```

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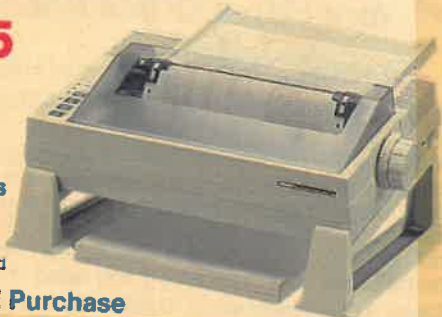
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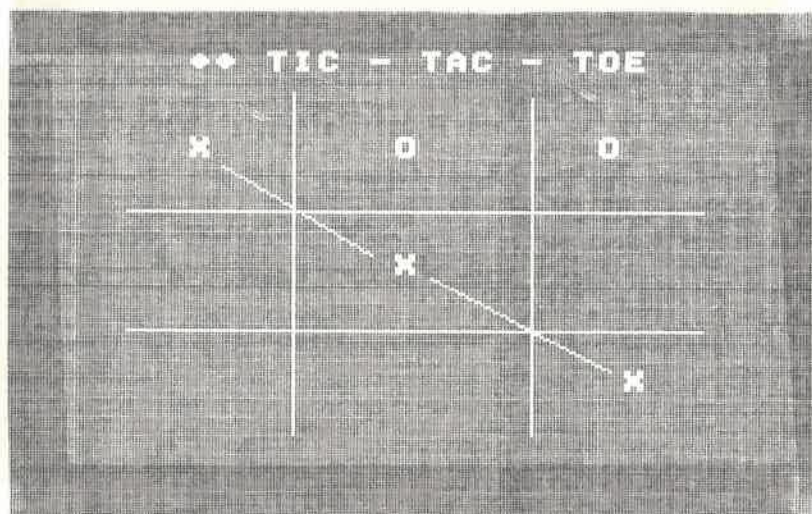
Special Purchase

Elevates printers so fanfold paper can be placed underneath to save desk space. #26-208





# THE PROGRAMMER



J U N E

THIS MONTH'S PROGRAM  
TIC-TAC-TOE!

# TIC-TAC-TOE

16K  
GAME

BY DAVID McNALLY

This is the classic version of the tic-tac-toe game. The boxes are numbered like shown in Figure 1. To pick a box press the number of the box desired. You can win in any direction. The bells will sound on your victory. Have fun!

THE PROGRAM: TICTAC

```
0 CLEAR 800:TURN=1
1 B(1)=0:B(2)=0:B(3)=0:B(4)=0:B(5)=0:B(6)=0:B(7)=0:B(8)=0:B(9)=0
2 GOSUB 1000
5 CLS0
10 X=95:FOR T=1 TO 11:READ T$:PRINT@X,T$;:X=X+32:NEXT T
12 DATA t,i,c, ,t,a,c, ,t,o,e
14 A$=CHR$(143+64)
16 FOR T=1 TO 29:B$=B$+A$:NEXT
17 ' *****DRAW BOARD*****
18 PRINT@129,B$;:PRINT@289,B$;:FOR T=10 TO 426 STEP 32:PRINT@T,A$;:NEXT T:FOR T=
20 TO 436 STEP 32:PRINT@T,A$;:NEXT
19 ' *****SET UP *****
20 P1$=CHR$(191)+CHR$(128)+CHR$(191):P2$=CHR$(128)+CHR$(191)+CHR$(128)
22 Q1$=CHR$(143)+CHR$(143)+CHR$(143):Q2$=CHR$(143)+CHR$(128)+CHR$(143)
24 ' *****GAME PLAY*****
25 PRINT@480,"WHAT BOX";
26 SP(1)=1:SP(2)=1:SP(3)=1:SP(4)=1:SP(5)=1:SP(6)=1:SP(7)=1:SP(8)=1:SP(9)=1
32 IF TURN=1 THEN PRINT@448,PL$;"'S TURN" ELSE IF TURN=2 THEN PRINT@448,PO$;"'S
TURN"
36 J$=INKEY$:IF J$=""THEN 36
38 IF VAL(J$)<1 OR VAL(J$)>9 THEN SOUND 5,2:SOUND 30,2:J$="" :GOTO 36
40 IF SP(VAL(J$))=0 THEN SOUND 50,8:GOTO 36
42 IF SP(VAL(J$))=1 THEN GOSUB 3000:SP(VAL(J$))=0
44 GOSUB 4000
46 IF TURN=1 THEN TURN=2:GOTO 32 ELSE IF TURN=2 THEN TURN=1:GOTO 32
1000 CLS
1002 PRINT" t I C"
1004 PRINT
1006 PRINT" A o "
1008 PRINT
1010 PRINT" C e"
1011 IF PL$="" THEN 1012 ELSE 1016
1012 PRINT:PRINT:INPUT"PLAYER #1";PL$:IF LEN(PL$)>10 THEN 1000
1014 CLS:GOTO 1000
1016 PRINT:PRINT:INPUT"PLAYER #2";PO$:IF LEN(PO$)>10 THEN 1000
1018 RETURN
3000 IF TURN=1 AND VAL(J$)=1 THEN PRINT@36,P1$;:PRINT@68,P2$;:PRINT@100,P1$; ELS
E IF TURN=2 AND VAL(J$)=1 THEN PRINT@36,Q1$;:PRINT@68,Q2$;:PRINT@100,Q1$;:RETURN
3002 IF TURN=1 AND VAL(J$)=2 THEN PRINT@46,P1$;:PRINT@78,P2$;:PRINT@110,P1$; ELS
E IF TURN=2 AND VAL(J$)=2 THEN PRINT@46,Q1$;:PRINT@78,Q2$;:PRINT@110,Q1$;:RETURN
3004 IF TURN=1 AND VAL(J$)=3 THEN PRINT@56,P1$;:PRINT@88,P2$;:PRINT@120,P1$; ELS
E IF TURN=2 AND VAL(J$)=3 THEN PRINT@56,Q1$;:PRINT@88,Q2$;:PRINT@120,Q1$;:RETURN
3006 IF TURN=1 AND VAL(J$)=4 THEN PRINT@196,P1$;:PRINT@228,P2$;:PRINT@260,P1$; E
LSE IF TURN=2 AND VAL(J$)=4 THEN PRINT@196,Q1$;:PRINT@228,Q2$;:PRINT@260,Q1$;:RE
TURN
```

```

3008 IF TURN=1 AND VAL(J$)=5 THEN PRINT@206,P1$;:PRINT@238,P2$;:PRINT@270,P1$; E
LSE IF TURN=2 AND VAL(J$)=5 THEN PRINT@206,Q1$;:PRINT@238,Q2$;:PRINT@270,Q1$;:RE
TURN
3010 IF TURN=1 AND VAL(J$)=6 THEN PRINT@216,P1$;:PRINT@248,P2$;:PRINT@280,P1$; E
LSE IF TURN=2 AND VAL(J$)=6 THEN PRINT@216,Q1$;:PRINT@248,Q2$;:PRINT@280,Q1$;:RE
TURN
3012 IF TURN=1 AND VAL(J$)=7 THEN PRINT@356,P1$;:PRINT@388,P2$;:PRINT@420,P1$; E
LSE IF TURN=2 AND VAL(J$)=7 THEN PRINT@356,Q1$;:PRINT@388,Q2$;:PRINT@420,Q1$;:RE
TURN
3014 IF TURN=1 AND VAL(J$)=8 THEN PRINT@366,P1$;:PRINT@398,P2$;:PRINT@430,P1$; E
LSE IF TURN=2 AND VAL(J$)=8 THEN PRINT@366,Q1$;:PRINT@398,Q2$;:PRINT@430,Q1$;:RE
TURN
3016 IF TURN=1 AND VAL(J$)=9 THEN PRINT@376,P1$;:PRINT@408,P2$;:PRINT@440,P1$; E
LSE IF TURN=2 AND VAL(J$)=9 THEN PRINT@376,Q1$;:PRINT@408,Q2$;:PRINT@440,Q1$;:RE
TURN
3066 IF TURN=1 AND VAL(J$)=4 THEN PRINT@196,P1$;:PRINT@228,P2$;:PRINT@260,P1$; E
LSE IF TURN=2 AND VAL(J$)=4 THEN PRINT@196,Q1$;:PRINT@228,Q2$;:PRINT@260,Q1$;:RE
TURN
4000 ' ***WINNER CHECK***
4002 B(VAL(J$))=TURN
4004 IF B(1)=TURN AND B(2)=TURN AND B(3)=TURN THEN GOTO 9000 ELSE GOTO 4006
4006 IF B(1)=TURN AND B(4)=TURN AND B(7)=TURN THEN GOTO 9000 ELSE GOTO 4008
4008 IF B(1)=TURN AND B(5)=TURN AND B(9)=TURN THEN GOTO 9000 ELSE GOTO 4010
4010 IF B(2)=TURN AND B(5)=TURN AND B(8)=TURN THEN GOTO 9000 ELSE GOTO 4012
4012 IF B(3)=TURN AND B(6)=TURN AND B(9)=TURN THEN GOTO 9000 ELSE GOTO 4014
4014 IF B(4)=TURN AND B(5)=TURN AND B(6)=TURN THEN GOTO 9000 ELSE GOTO 4016
4016 IF B(7)=TURN AND B(8)=TURN AND B(9)=TURN THEN GOTO 9000 ELSE GOTO 4018
4018 IF B(3)=TURN AND B(5)=TURN AND B(7)=TURN THEN GOTO 9000 ELSE GOTO 4020
4020 IF SP(1)=0 AND SP(2)=0 AND SP(3)=0 AND SP(4)=0 AND SP(5)=0 AND SP(6)=0
AND SP(7)=0 AND SP(8)=0 AND SP(9)=0 THEN CLS:PRINT"tie!":FOR T=1 TO 2000:NE
XT T:END
4022 RETURN
9000 FOR T=1 TO 4:FOR Y=5 TO 100 STEP 5:SOUND Y,1:NEXT Y:NEXT T:CLS
9002 IF TURN=1 THEN PRINTPL$;" WON." ELSE IF TURN=2 THEN PRINTPO$;" WON."
9004 END

```

### HEX\$ TO DECIMAL PROGRAM...

This short program changes HEX\$ values to DECIMAL numbers.

```

1 ' HEX$ TO DECIMAL
2 PRINT"ENTER HEX$ NUMBER:";LINEINPUT A$
3 B$="&H"
4 CD=VAL(B$+A$)
5 PRINT"DECIMAL NUMBER: ";CD

```

11	12	13
14	15	16
17	18	19



# BLOWOUT!

16K ECB  
GAME

BY ALBERT NOAH

In this game you try to protect yourself from the evil side which is trying to blow you up with their missiles. You have three walls of protection in which you move with the right joystick. You must block a missile with the lowest wall, and you score 10 points for every block you make, but if you miss, the missile blows up and destroys one of your walls. The game ends when all of the walls have been destroyed. Good Luck!

THE PROGRAM: BLOWOUT!

```
0 REM COPYRIGHT (C) JUNE 1989
1 REM DUNGEONMASTER SOFTWARE
2 REM WRITTEN BY ALBERT NOAH
3 L=3:SC=0:CLS:A=131
4 CLS:A=131
5 FOR X=1 TO 3
6 BUKT$(X)=" "+CHR$(A)+CHR$(A)+CHR$(A)+CHR$(A)+CHR$(A)
7 NEXT
8 B=0:Z=417+RND(30)
9 PRINT@0,"LIFES";L:PRINT@15,"SCORE";SC
10 PRINT @32, STRING$(32,CHR$(240))
11 PRINT@416+32,"blowout!","high";HS
12 A=131:P=416:FOR X=1 TO 3:P=64:FOR X=1 TO L
16 PRINT @P+J," ";BUKT$(X)
17 P=P+32:NEXT
19 B=B+1:IF B=15 THEN GOSUB 40
20 PRINT@Z,CHR$(191);:PRINT@Z+32," ";
21 IF Z<64 OR Z<96 THEN 44
22 IF P+J+K=Z THEN 53
23 IF P+J+K+1=Z THEN 53
24 IF P+J+K+2=Z THEN 48
25 IF P+J+K+3=Z THEN 53
26 IF P+J+K+4=Z THEN 53
27 IF P+J+K+5=Z THEN 53
28 IF P+J+6=Z THEN 53
29 IF P=P+7=Z THEN 53
30 Z=Z-32:IF SC>HS THEN HS=SC
31 GOSUB 34
32 GOTO 9
34 Q=JOYSTK(0)
35 IF Q=63 THEN J=J+2
36 IF Q=0 THEN J=J-2
37 IF J>25 THEN J=25
38 IF J<0 THEN J=0
39 RETURN
40 Z=RND(30):Z=Z+416:B=0:RETURN
44 FOR E=1 TO 6:T=RND(8):CLS T
46 PRINT @235,"you're dead";
47 FOR R=1 TO 100:NEXT R
48 NEXT:L=L-1:IF L=0 THEN 56:CLS:GOTO 8
50 CLS:GOTO 8
53 SC=SC+10:SOUND RND(200),1:CLS:GOTO 8
56 CLS:INPUT " AGAIN (Y/N)";Z$:PRINT
58 IF Z$="Y" THEN 3
60 CLS:END
```

# BOWLING

BY FLOYD KEIRNAN

32K ECB  
GAME

When was the last time you bowled? Now you can have the whole bowling alley right here on your CoCo! After typing in the listing, save it to tape or disk, and then RUN it. After the title screen, a sample preview of how the game is played is shown. All instructions on how to play the game is on-screen. Have fun!

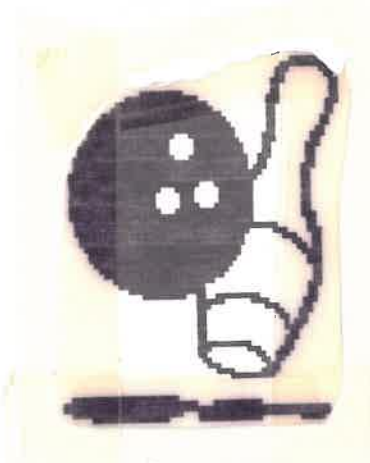
THE PROGRAM: COCOBOWL

```
1 ' COCO'S BOWLING ALLEY
2 CLS:PRINT@261,"COCO'S BOWLING ALLEY":FOR Q=@TO5@0:NEXT:Pmode4,1:PCLS
3 GOSUB34
4 'FOR TRS-80 COCO WITH 32K RAM AND EXTENDED BASIC.
5 'BY FLOYD KEIRNAN,2598 ROBINHOOD PL.,ORANGE,CALIF.
6 CLS:PRINT@98,"BALL IS POSITIONED RANDOMLY BEHIND THE FOUL LINE.":PRINT@16
@,"SPEED AND ENGLISH ARE CONTROLLED BY THE RIGHT JOYSTICK."
7 PRINT@227,"SPEED ^ ; LEFT CURVE <--":PRINT@258,"STRAIGHT 'CT'; RT CURVE -->"
10 PRINT@417,"PRESS 'S'(NORMAL)/'F'(FAST) TO CONTINUE"
25 A$=INKEY$:IF A$="" THEN 25
26 IF A$="S" THEN POKE 65494,@:CLS
27 IF A$="F" THEN POKE 65495,@:CLS
28 PCLS2:CLS
29 PRINT@130,"PRESS THE RED BUTTON ON THE JOYSTICK TO THROW THE BALL":PRINT@
226,"SPEED '^' CONTROLS THE BALL RELEASE ANGLE":PRINT@322,"PRESS 'E' FOR EAS
Y,WITH DIR.^":PRINT@354,"PRESS 'M' FOR MEDIUM,":PRINT@386,"OR 'H' FOR A HARDER G
AME":FR=1
30 B$=INKEY$:IF B$="" THEN 30
31 IF B$="E" THEN ER=6
32 IF B$="H" THEN ER=RND(12)
33 IF B$="M" THEN ER=RND(8)+2
34 DRAW "BM21,15;S8;G1L2H1U4E1R2F1;BM+4,+5;H1U4E1R2F1D4G1L2;BM+10,-1;G1L2H1U4E1R
2F1;BM+4,+5;H1U4E1R2F1D4G1L2;BM+7,-5;E2;BM+4,+6;F1;R2;E1;U1;H1;L2;H1;U1;E1;R2;F1
"
36 DRAW"BM9,30;S4;U6R3F1D1G1NL3F1D1G1L3;BM+8,0;H1U4E1R2F1D4G1L2;BM+6,0;NU6E2NU1F
2U6;BM+3,6;NU6R4U1BM+4,+1;R1NR1U6NL1R1;BM+4,+6;U6F1D1F2D1F1NU6;BM+4,+0;H1U4E1R2F
1;BM+0,+2;NL1D2G1L2;BM+10,+0;U4E2F2D2NL4D2;BM+3,+0;NU6R4U1;BM+3,+1;NU6R4U1;"
37 DRAW"BM+3,+1;NR4U3NR2U3R4;BM+3,+0;D2F2ND2E2U2":SCREEN1,1:IF FR<>0 THEN 45
39 DRAW "BM12,189;S4;U6R3F1D1G1NL3F1D1G1L3;BM+8,-6;D2F2ND2E2U2;BM+8,+6;U3NR2U3R4
;BM+2,+0;D6R4;BM+3,+0;H1U4E1R2F1D4G1L2;BM+6,-6;D2F2ND2E2U2;BM+3,+0;D6R2E2U2H2L2;
BM+10,+0;D3ND3R1NE3F3;BM+3,+0;NR4U3NR2U3R4;BM+4,+0;D6;BM+5,+0;U6R3F1D1G1NL3F1D2;
40 DRAW "BM+4,+0;U6F1D1F2D1F1NU6;BM+4,+0;U4E2F2D2NL4D2;BM+4,+0;U6F1D1F2D1F1NU6"
41 GOSUB 3000:K=65:Y=J=180:FR=0
45 B=1:ST=0
50 LINE(0,180)-(133,10),PSET 'DRAW ALLEY
60 LINE (0,192)-(138,10),PSET
70 LINE (125,192)-(185,10),PSET
80 LINE(134,192)-(189,10),PSET
82 CIRCLE(161,44),44,,1,.65,.87
84 CIRCLE(35,70),15,1:CIRCLE(36,62),3,1:CIRCLE(42,68),3,1:CIRCLE(31,73),3,1:LINE
(8,115)-(35,84),PSET
85 LINE(7,180)-(128,180),PSET
87 DRAW"BM150,192;U10L3U2R36D2L35R32D10":DRAW"BM150,178;R6L3U4"
88 CIRCLE(153,170),6,,1.2,.9,.6:DRAW"BM147,170;R12"
89 CIRCLE(153,172),1,,2
90 CIRCLE(143,12),3,,2 'SET PINS
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100 CIRCLE(155,12),3,,2
110 CIRCLE(154,20),3,,2
120 CIRCLE(165,12),3,,2
130 CIRCLE(164,20),3,,2
140 CIRCLE(175,12),3,,2
150 CIRCLE(155,28),3,,2
160 CIRCLE(144,20),3,,2
170 CIRCLE(145,28),3,,2
180 CIRCLE(146,36),3,,2
185 S1=0:S2=0
186 SCREEN1,1
190 GOTO 430
200 CIRCLE(X,Y),Z 'DRAW BALL
220 CIRCLE(X,Y),Z,4 'ERASE BALL
225 IF Y>50 THEN 320
227 IF X=>187 THEN FOR Y=Y TO 0 STEP -10:CIRCLE(X,Y),Z:CIRCLE(X,Y),Z,4:NEXT Y
229 REM PIN WINDOWS, 1ST BALL
230 IF B=1 AND X>168 AND X<181 AND Y>8 AND Y<24 THEN GOSUB 2000:GOSUB2100:B=2:Y=
1:S1=1
240 IF B=1 AND X>163 AND X<172 AND Y>10 AND Y<32 THEN GOSUB 2000:GOSUB 2060:GOSU
B 2090:GOSUB 2100:Y=1:B=3:S1=3
245 IF B=1 AND CC=2 AND X>138 AND X<148 AND Y>40 AND Y<50 THEN GOSUB2000:GOSUB20
10:GOSUB2020:GOSUB2030:GOSUB2040:GOSUB2050:GOSUB2060:GOSUB2080:GOSUB2090:Y=1:B=8
:S1=8
268 IF B=1 AND CC=2 AND X>125 AND X<135 AND Y>25 AND Y<45.6 THEN GOSUB2000:GOSUB
2020:GOSUB2040:GOSUB2050:GOSUB2070:GOSUB2080:GOSUB2090:Y=1:B=11:S1=6
270 IF B=1 AND X>142 AND X<157 AND Y>25 AND Y<37 THEN GOSUB 2000:GOSUB2010:GOSUB
2000:GOSUB15000:GOSUB2000:GOSUB15000:GOSUB2000:GOSUB2020:GOSUB2030:GOSUB2040:GOS
UB2050:GOSUB2060:GOSUB2070:GOSUB2000:GOSUB2080:GOSUB2090:GOSUB2100:Y=1:B=6:S1=10
272 IF B=1 AND CC=2 AND X>131 AND X<142 AND Y>32 AND Y<49 THEN GOSUB2000:GOSUB20
10:GOSUB2000:GOSUB15000:GOSUB2000:GOSUB15000:GOSUB2000:GOSUB2020:GOSUB2030:GOSUB
2040:GOSUB2050:GOSUB2060:GOSUB2070:GOSUB2000:GOSUB2080:GOSUB2090:GOSUB2100:Y=1:B
=6:S1=10
274 IF B=1 AND X>154 AND X<164 AND Y>10 AND Y<40 THEN GOSUB 2000:GOSUB 2030:GOSU
B 2050:GOSUB 2060:GOSUB 2080:GOSUB 2090:GOSUB 2100:Y=1:B=4:S1=6
280 IF B=1 AND X>149 AND X<154 AND Y>24 AND Y<48 THEN GOSUB 2000:GOSUB 2010:GOSU
B 2030:GOSUB 2040:GOSUB 2050:GOSUB 2060:GOSUB 2080:GOSUB 2090:Y=1:B=7:S1=7
288 IF B=1 AND CC=2 AND X>138 AND X<148 AND Y>40 AND Y<50 THEN GOSUB2000:GOSUB20
10:GOSUB2020:GOSUB2030:GOSUB2040:GOSUB2050:GOSUB2060:GOSUB2080:GOSUB2090:Y=1:B=8
:S1=8
290 IF B=1 AND X>143 AND X<149 AND Y>34 AND Y<49 THEN GOSUB 2000:GOSUB 2010:GOSU
B 2020:GOSUB 2030:GOSUB 2040:GOSUB 2050:GOSUB 2060:GOSUB 2080:GOSUB 2090:Y=1:B=8
:S1=8
300 IF B=1 AND X>129 AND X<144 AND Y>35 AND Y<48 THEN GOSUB 2000:GOSUB 2010:GOSU
B 2020:GOSUB 2030:GOSUB 2040:GOSUB 2050:GOSUB 2060:GOSUB 2070:GOSUB 2080:GOSUB 2
090:Y=1:B=9:S1=9
318 IF B=1 AND CC=2 AND X>125 AND X<144 AND Y>25 AND Y<47 THEN GOSUB2000:GOSUB20
20:GOSUB2040:GOSUB2050:GOSUB2070:GOSUB2080:GOSUB2090:Y=1:B=11:S1=6
320 IF B=1 AND X>136 AND X<151 AND Y>18 AND Y<40 THEN GOSUB2000:GOSUB 2020:GOSUB
2040:GOSUB 2050:GOSUB 2070:GOSUB 2080:GOSUB 2090:Y=1:B=11:S1=6
338 IF B=1 AND CC=2 AND X>114 AND X<130 AND Y>23 AND Y<44.5 THEN GOSUB2000:GOSUB
2040:GOSUB2070:GOSUB2080:Y=1:B=13:S1=3
340 IF B=1 AND X>130 AND X<149 AND Y=>13 AND Y<36 THEN GOSUB 2000:GOSUB 2040:GOS
UB 2070:GOSUB 2080:Y=1:B=13:S1=3
349 REM ESTABLISH 1ST BALL THROW
350 E=ABS(JOYSTK(0)-32)
352 IF E<15 THEN CC=0:GOTO 369 'STRAIGHT BALL
364 IF Y>170 THEN 365

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365 IF Y>170 AND JOYSTK(0)<16 THEN CC=1 'LEFT CURVE
366 IF Y>170 AND JOYSTK(0)>46 THEN CC=2 'RT CURVE
367 IF CC=1 THEN 370
368 IF CC=2 THEN 372
369 X=X+10:GOTO 375
370 X=X+20*(Y/300):GOTO 375
371 IF Y<1 THEN Y=1
372 X=X+(25/(Y/40))
375 IF Y>170 THEN V=27-JOYSTK(1)/5 'VELOCITY
379 Y=Y-V-ER+6 'DIFFICULTY FACTOR
390 Z=Z-.2
400 IF Y<1 THEN Y=1:X=141:Z=6:GOSUB16000:GOSUB 1030
410 GOTO 200
430 K=RND(50)+40 'POSITION BALL
432 IF FR=0 THEN J=188:K=70:B=15:V=25:FOR Q=0TO2000:NEXT 'TITLE PAGE
433 LINE(7,180)-(128,180),PSET
434 CIRCLE(K,J),7
440 IF FR=0 THEN FR=FR+1:GOSUB 470
450 P=PEEK(65280):IF P=126 OR P=254 THEN 470 ELSE 452
452 IF B#="E" THEN 455 ELSE 450
455 AA=JOYSTK(0):AG=(JOYSTK(1)+100)/12
458 LINE(K,J)-(K+AG,170),PSET
459 FOR Q=0TO1:NEXT Q
460 LINE(K,J)-(K+AG,170),PRESET
465 GOTO 450
470 Y=J:Z=8:X=K
475 CIRCLE(K,J),7,4
480 IF B=1 GOTO 200
500 REM 2ND BALL WINDOWS
520 IF B=2 AND X>164 AND X<172 AND Y>16 AND Y<32 THEN GOSUB 2000:GOSUB2060:GOSUB
  2090:Y=1:S2=2
540 IF B=2 AND X>=140 AND X<157 AND Y>25 AND Y<48 THEN GOSUB 2000:GOSUB 2010:GOS
  UB 2020:GOSUB2030:GOSUB 2040:GOSUB 2050:GOSUB 2060:GOSUB 2070:GOSUB 2080:GOSUB 2
  090:Y=1:S2=9
542 IF B=2 AND CC=2 AND X>128 AND X<140 AND Y>42 AND Y<50 THEN GOSUB2000:GOSUB20
  10:GOSUB2020:GOSUB2030:GOSUB2040:GOSUB2050:GOSUB2060:GOSUB2060:GOSUB2070:GOSUB20
  80:GOSUB2090:Y=1:S2=9
560 IF B=2 AND X>129 AND X<151 AND Y>29 AND Y<40 THEN GOSUB 2000:GOSUB 2020:GOSU
  B 2040:GOSUB 2050:GOSUB2070:GOSUB2080:GOSUB 2090:Y=1:S2=6
562 IF B=2 AND CC=2 AND X>124 AND X<140 AND Y>26 AND Y<48 THEN GOSUB2000:GOSUB20
  20:GOSUB2040:GOSUB2050:GOSUB2070:GOSUB2080:GOSUB2090:Y=1:S2=6
570 IF B=2 AND X>154 AND X<164 AND Y>24 AND Y<40 THEN GOSUB2000:GOSUB2030:GOSUB
  2050:GOSUB2060:GOSUB 2080:GOSUB 2090:Y=1:S2=5
580 IF B=2 AND X>134 AND X<149 AND Y>10 AND Y<36 THEN GOSUB 2000:GOSUB2040:GOSUB
  2070:GOSUB 2080:Y=1:S2=3
597 GOSUB 1500
600 IF B=3 AND X>154 AND X<164 AND Y>24 AND Y<40 THEN GOSUB 2000:GOSUB 2030:GOSU
  B 2050:GOSUB 2080:Y=1:S2=3
610 IF B=3 AND X>140 AND X<155 AND Y>19 AND Y<45 THEN GOSUB 2000:GOSUB 2010:GOSU
  B 2020:GOSUB 2030:GOSUB 2040:GOSUB 2050:GOSUB 2070:GOSUB2080:Y=1:S2=7
628 IF B=3 AND CC=2 AND X>122 AND X<140 AND Y>30 AND Y<44 THEN GOSUB2000:GOSUB20
  20:GOSUB2040:GOSUB2050:GOSUB2070:GOSUB2080:Y=1:S2=5
630 IF B=3 AND X>136 AND X<152 AND Y>19 AND Y<40 THEN GOSUB2000:GOSUB2020:GOSUB2
  040:GOSUB2050:GOSUB2070:GOSUB2080:Y=1:S2=5
638 IF B=3 AND CC=2 AND X>120 AND X<145 AND Y>20 AND Y<40 THEN GOSUB2000:GOSUB20
  40:GOSUB2070:GOSUB2080:Y=1:S2=3
640 IF B=3 AND X>135 AND X<149 AND Y>6 AND Y<36 THEN GOSUB 2000:GOSUB2040:GOSUB2
  070:GOSUB2080:Y=1:S2=3

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660 GOSUB 1500
670 IF B=4 AND X>153 AND X<160 AND Y>24 AND Y<41 THEN GOSUB 2000:GOSUB 2010:Y=1:
S2=1
700 IF B=4 AND X>135 AND X<155 AND Y=>24 AND Y<48 THEN GOSUB2000:GOSUB2010:GOSUB
2020:GOSUB 2040:GOSUB2070:Y=1:S2=4
708 IF B=4 AND CC=2 AND X>123 AND X<140 AND Y>25 AND Y<45 THEN GOSUB 2000:GOSUB2
040:GOSUB2070:Y=1:S2=2
710 IF B=4 AND X>134 AND X<153 AND Y=>9 AND Y<35 THEN GOSUB2000:GOSUB 2040:GOSUB
2070:Y=1:S2=2
750 GOSUB1500
770 IF B=7 AND X>165 AND X<179 AND Y>2 AND Y<28 THEN GOSUB 2000:GOSUB2100:Y=1:S2
=1
773 IF B=7 AND CC=2 AND X>131 AND X<140 AND Y>35 AND Y<48 THEN GOSUB 2000:GOSUB2
025:GOSUB2100:GOSUB2070:S2=3:Y=1
775 IF B=7 AND X>133 AND X<145 AND Y>25 AND Y<40 THEN GOSUB 2000:GOSUB 2025:GOSU
B2100:GOSUB2070:S2=3:Y=1
780 IF B=7 AND X>134 AND X<151 AND Y>19 AND Y<44 THEN GOSUB 2000:GOSUB2020:GOSUB
2070:Y=1:S2=2
788 IF B=7 AND CC=2 AND X>126 AND X<132 AND Y>20 AND Y<35 THEN GOSUB 2000:GOSUB2
070:Y=1:S2=1
790 IF B=7 AND X=>135 AND X<150 AND Y>3 AND Y<29 THEN GOSUB2000:GOSUB2070:Y=1:S
2=1
795 GOSUB1500
800 IF B=8 AND X>178 AND X<185 AND Y>5 AND Y<24 THEN GOSUB 2000:GOSUB 2125:GOS
UB 2070:Y=1:S2=2
802 IF B=8 AND CC=2 AND X>138 AND X<165 AND Y>20 AND Y<34 THEN GOSUB2000:GOSUB21
00:Y=1:S2=1
803 IF B=8 AND CC=2 AND X>125 AND X<145 AND Y>10 AND Y<35 THEN GOSUB2000:GOSUB 2
070:Y=1:S2=1
805 IF B=8 AND X>165 AND X<180 AND Y>1 AND Y<26 THEN GOSUB 2000:GOSUB 2100:Y=1:S
2=1
810 IF B=8 AND X>133 AND X<152 AND Y>1 AND Y<28 THEN GOSUB2000:GOSUB2070:Y=1:S2=
1
820 IF B=9 AND X>164 AND X<185 AND Y>4.5 AND Y<24 THEN GOSUB2000:GOSUB2100:Y=1:S
2=1
822 IF B=9 AND CC=2 AND X>160 AND X<180 AND Y>15 AND Y<30 THEN GOSUB2000:GOSUB21
00:Y=1:S2=1
825 GOSUB 1500
890 IF B=11 AND X>168 AND X<181 AND Y>8 AND Y<24 THEN GOSUB 2000:GOSUB2100:S2=1
895 IF B=11 AND X>155 AND X<172 AND Y>10 AND Y<32 THEN GOSUB2000:GOSUB 2060:GOSU
B2100:Y=1:S2=2
898 IF B=11 AND CC=2 AND X>132 AND X<159 AND Y>32 AND Y<46 THEN GOSUB 2000: GOSU
B 2010:GOSUB 2030:GOSUB 2060:GOSUB 2100:Y=1:S2=4
900 IF B=11 AND X>139 AND X<157 AND Y>25 AND Y<47 THEN GOSUB 2000:GOSUB2010:GOSU
B 2030:GOSUB2060:GOSUB 2100:Y=1:S2=4
915 GOSUB 1500
938 IF B=13 AND X>165 AND X<182 AND Y>8 AND Y<24 THEN GOSUB2000:GOSUB2100:S2=1
940 IF B=13 AND X>164 AND X<172 AND Y>16 AND Y<32 THEN GOSUB 2000:GOSUB 2060:GOS
UB2090:GOSUB 2100:Y=1:S2=3
945 IF B=13 AND X>154 AND X<164 AND Y>24 AND Y<40 THEN GOSUB2000:GOSUB 2030:GOSU
B2050:GOSUB 2060:GOSUB2090:GOSUB 2100:Y=1:S2=5
948 IF B=13 AND CC=2 AND X>132 AND X<153 AND Y>27 AND Y<49 THEN GOSUB 2000:GOSUB
2010:GOSUB 2020:GOSUB 2030:GOSUB 2050:GOSUB 2060:GOSUB 2090:GOSUB 2100:Y=1:S2=7
950 IF B=13 AND CC<>2 AND X>138 AND X<154 AND Y>26 AND Y<48 THEN GOSUB2000:GOSUB
2010:GOSUB2020:GOSUB2030:GOSUB2050:GOSUB2060:GOSUB2090:GOSUB2100:Y=1:S2=7
958 IF B=13 AND CC=2 AND X>126.5 AND X<140 AND Y>30 AND Y<40 THEN GOSUB 2000:GOS
UB 2020:GOSUB 2050:GOSUB 2090:Y=1:S2=3
960 IF B=13 AND X>136 AND X<151 AND Y>18 AND Y<40 THEN GOSUB2000:GOSUB2020:GOSUB
2050:GOSUB2090:Y=1:S2=3
965 GOSUB 1500

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970 IF B=14 AND X>168 AND X<181 AND Y>8 AND Y<24 THEN GOSUB 2000:GOSUB 2100:Y=1:
S2=1
972 IF B=14 AND X>164 AND X<172 AND Y>16 AND Y<32 THEN GOSUB 2000:GOSUB 2060:GOS
UB 2090:GOSUB 2100:Y=1:S2=3
974 IF B=14 AND X>154 AND X<164 AND Y>24 AND Y<40 THEN GOSUB 2000:GOSUB 2030:GOS
UB 2050:GOSUB 2060:GOSUB 2080:GOSUB 2090:GOSUB 2100:Y=1:S2=6
976 IF B=14 AND X>140 AND X<157 AND Y>25 AND Y<37 THEN GOSUB 2000:GOSUB2010:GOSU
B2020:GOSUB 2030:GOSUB2040:GOSUB2050:GOSUB2060:GOSUB2070:GOSUB2080:GOSUB2090:GOS
UB2100:Y=1:S2=10
978 IF B=14 AND X>149 AND X<154 AND Y>24 AND Y<48 THEN GOSUB2000:GOSUB2010:GOSUB
2030:GOSUB2040:GOSUB2050:GOSUB2060:GOSUB2080:GOSUB2090:Y=1:S2=7
980 IF B=14 AND X>144 AND X<149 AND Y>34 AND Y<49 THEN GOSUB2000:GOSUB2010:GOSUB
2020:GOSUB2030:GOSUB2040:GOSUB2050:GOSUB2060:GOSUB2080:GOSUB2090:Y=1:S2=8
982 IF B=14 AND X>139 AND X<144 AND Y>35 AND Y<48 THEN GOSUB 2000:GOSUB2010:GOSU
B2020:GOSUB2030:GOSUB2040:GOSUB2050:GOSUB2060:GOSUB2070:GOSUB2080:GOSUB2090:Y=1:
S2=9
984 IF B=14 AND X>136 AND X<151 AND Y>18 AND Y<40 THEN GOSUB2000:GOSUB2020:GOSUB
2040:GOSUB2050:GOSUB2070:GOSUB2080:GOSUB2090:Y=1:S2=6
986 IF B=14 AND X>130 AND X<149 AND Y>13 AND Y<36 THEN GOSUB2000:GOSUB 2040:GOSU
B 2070:GOSUB 2080:Y=1:S2=3
990 GOSUB 1500
999 REM ERASE FALLEN PINS
1000 CIRCLE(146,36),6,4,.4:CIRCLE(145,28),6,4,.4:CIRCLE(144,20),6,4,.4:CIRCLE(15
5,28),6,4,.4:CIRCLE(175,12),6,4,.4:CIRCLE(164,20),6,4,.4:CIRCLE(165,12),6,4,.4:C
IRCLE(154,20),6,4,.4:CIRCLE(155,12),6,4,.4:CIRCLE(143,12),6,4,.4:CIRCLE(170,16),
6,4,.4
1005 CIRCLE(153,14),6,4,.4
1010 RETURN
1020 REM BALL RETURN
1030 X=141:Z=6
1040 CIRCLE(X,Y),Z
1050 LINE(0,192)-(138,10),PSET:LINE(0,180)-(133,10),PSET
1060 CIRCLE(X,Y),Z,4
1070 X=X-8
1080 Y=Y+10
1090 Z=Z+.1
1100 IF Y=>170 THEN Y=170:X=9:Z=7:CIRCLE(X,Y),Z:GOSUB 3000
1110 IF Y=>170 THEN GOSUB 1000:GOSUB 190
1130 GOTO 1040
1500 SCREEN1,1 'ESTABLISH 2ND BALL THROW
1501 E=ABS(JOYSTK(0)-32)
1502 IF E<15 THEN CC=0:GOTO 1509
1503 IF Y>170 AND JOYSTK(0)<16 THEN CC=1
1504 IF(Y>170 AND JOYSTK(0)>46) OR T=0 THEN CC=2
1505 IF CC=1 THEN 1510
1506 IF CC=2 THEN 1512
1509 X=X+10:GOTO 1514
1510 X=X+20*(Y/300):GOTO 1514
1511 IF Y<1 THEN Y=1
1512 X=X+(25/(Y/40))
1514 IF Y>170 THEN V=27-JOYSTK(1)/5
1515 IF FR<2 AND T=0 THEN V=20
1516 IF V>0 THEN Y=Y-V
1518 Z=Z-.2
1520 IF Y<1 THEN Y=1:X=150:B=1:GOSUB 1030
1530 CIRCLE(X,Y),Z

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1540 IF T=1 THEN CIRCLE(X,Y),Z,4
1542 IF X>188 THEN FOR Y=Y TO 0 STEP -10:CIRCLE(X,Y),Z:CIRCLE(X,Y),Z,4:NEXT Y
1545 IF Y>50 THEN 990 ELSE 1550
1550 ON B GOTO 200,520,600,670,730,800,770,800,820,830,890,920,938,970,17000
1560 RETURN
2000 SOUND 175,1
2005 RETURN
2009 REM DRAW FALLEN PINS
2010 CIRCLE(146,36),3,4,2:CIRCLE(146,36),6,,.4
2015 RETURN
2020 CIRCLE(145,28),3,4,2:CIRCLE(145,28),6,,.4
2022 RETURN
2025 CIRCLE(145,28),3,4,2:CIRCLE(164,20),3,,2:CIRCLE(164,20),3,4,2:CIRCLE(170,16
),6,,.4
2027 RETURN
2030 CIRCLE(155,28),3,4,2:CIRCLE(155,28),6,,.4
2035 RETURN
2040 CIRCLE(144,20),3,4,2:CIRCLE(144,20),6,,.4
2045 RETURN
2050 CIRCLE(154,20),3,4,2:CIRCLE(154,20),6,,.4
2055 RETURN
2060 CIRCLE(164,20),3,4,2:CIRCLE(164,20),6,,.4
2065 RETURN
2070 CIRCLE(143,12),3,4,2:CIRCLE(143,12),6,,.4
2075 RETURN
2080 CIRCLE(155,12),3,4,2:CIRCLE(155,12),6,,.4
2085 RETURN
2090 CIRCLE(165,12),3,4,2:CIRCLE(165,12),6,,.4
2095 RETURN
2100 CIRCLE(175,12),3,4,2:CIRCLE(175,12),6,,.4
2105 RETURN
2125 CIRCLE(175,12),3,4,2:CIRCLE(155,12),3,,2:CIRCLE(155,12),3,4,2:CIRCLE(153,14
),6,,.4
2127 RETURN
2990 REM DRAW SCORE SHEET
3000 DRAW"BM 210,5;D185R40U185L12D168L28R40U14L40U14R40U14L40U14R40U14L40U14R40U
14L40U14R40U14L40U14R40U14L40U14R40
3001 IF FR=0 THEN RETURN
3005 DRAW"BM170,178;R6L3U4":CIRCLE(173,170),6,,1.2,.9,.6:DRAW"BM167,172;R10"
3100 GOTO 12018
3200 GOTO 1110
12000 REM LOGIC FOR FRAME SET-UP AND SCORING
12018 IF FR=11 AND A1<10 THEN 12600
12019 IF B=15 THEN S2=S2+1
12020 IF B=6 OR B=1 OR FR=12 THEN GOTO 12030 ELSE GOTO 1110
12030 ON FR GOSUB 12500,12510,12520,12530,12540,12550,12560,12570,12580,12590,12
600,12610
12031 GOSUB 1000
12032 IF T=0 AND FR=1 THEN T=1:GOTO 6
12033 C1=A1:C2=A2:A1=S1:A2=S2
12035 FR=FR+1:B=1:GOTO 50
12500 IF S1=10AND FR=1 THEN DRAW"C3; BM241,15":GOSUB 12700
12502 IF FR=1 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,15":GOSUB 12710
12503 IF FR=1 AND S1+S2<10 THEN DRAW"BM207,15": GOSUB 12750
12510 IF FR=2 AND S1=10 THEN DRAW"BM241,29":GOSUB 12700
12512 IF FR=2 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,29":GOSUB 12710
12514 IF FR=2 AND A1<10 AND A1+A2=10 THEN DRAW"BM207,15":GOSUB 12730
12515 IF FR=2 AND A1=10 AND S1<10 THEN DRAW"BM207,15":GOSUB 12740

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12515 IF FR=2 AND A1=10 AND S1<10 THEN DRAW"BM207,15":GOSUB 12740
12516 IF FR=2 AND S1+S2<10 THEN DRAW"BM207,29":GOSUB 12750
12520 IF FR=3 AND S1=10 THEN DRAW"BM241,43":GOSUB 12700
12522 IF FR=3 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,43":GOSUB 12710
12523 IF FR=3 AND C1=10 AND A1=10 THEN DRAW"BM207,15":GOSUB12760
12525 IF FR=3 AND A1=10 AND S1<10 THEN DRAW"BM207,29":GOSUB 12740
12526 IF FR=3 AND A1<10 AND A1+A2=10 THEN DRAW"BM207,29":GOSUB 12730
12528 IF FR=3 AND S1+S2<10 THEN DRAW"BM207,43":GOSUB 12750
12530 IF FR=4 AND S1=10 THEN DRAW"BM241,57":GOSUB 12700
12532 IF FR=4 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,57":GOSUB 12710
12533 IF FR=4 AND C1=10 AND A1=10 THEN DRAW"BM207,29":GOSUB12760
12534 IF FR=4 AND A1<10 AND A1+A2=10 THEN DRAW "BM207,43":GOSUB 12730
12535 IF FR=4 AND A1=10 AND S1<10 THEN DRAW "BM207,43":GOSUB 12740
12536 IF FR=4 AND S1+S2<10 THEN DRAW"BM207,57":GOSUB 12750
12540 IF FR=5 AND S1=10 THEN DRAW"BM241,71":GOSUB 12700
12542 IF FR=5 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,71":GOSUB12710
12543 IF FR=5 AND C1=10 AND A1=10 THEN DRAW "BM207,43":GOSUB 12760
12544 IF FR=5 AND A1<10 AND A1+A2=10 THEN DRAW "BM207,57":GOSUB 12730
12545 IF FR=5 AND A1=10 AND S1<10 THEN DRAW"BM207,57":GOSUB 12740
12546 IF FR=5 AND S1+S2<10 THEN DRAW"BM207,71":GOSUB12750
12550 IF FR=6 AND S1=10 THEN DRAW"BM241,85":GOSUB 12700
12552 IF FR=6 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,85":GOSUB12710
12553 IF FR=6 AND C1=10 AND A1=10 THEN DRAW"BM207,57":GOSUB 12760
12554 IF FR=6 AND A1<10 AND A1+A2=10 THEN DRAW "BM207,71":GOSUB 12730
12555 IF FR=6 AND A1=10 AND S1<10 THEN DRAW"BM207,71":GOSUB 12740
12556 IF FR=6 AND S1+S2<10 THEN DRAW "BM207,85":GOSUB 12750
12560 IF FR=7 AND S1=10 THEN DRAW"BM241,99":GOSUB 12700
12562 IF FR=7 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,99":GOSUB 12710
12563 IF FR=7 AND C1=10 AND A1=10 THEN DRAW"BM207,71":GOSUB12760
12564 IF FR=7 AND A1<10 AND A1+A2=10 THEN DRAW "BM207,85":GOSUB 12730
12565 IF FR=7 AND A1=10 AND S1<10 THEN DRAW "BM 207,85":GOSUB 12740
12566 IF FR=7 AND S1+S2<10 THEN DRAW "BM207,99":GOSUB 12750
12570 IF FR=8 AND S1=10 THEN DRAW"BM241,113":GOSUB12700
12572 IF FR=8 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,113":GOSUB12710
12573 IF FR=8 AND C1=10 AND A1=10 THEN DRAW"BM207,85":GOSUB12760
12574 IF FR=8 AND A1<10 AND A1+A2=10 THEN DRAW "BM207,99":GOSUB 12730
12575 IF FR=8 AND A1=10 AND S1<10 THEN DRAW "BM207,99":GOSUB 12740
12576 IF FR=8 AND S1+S2<10 THEN DRAW"BM207,113":GOSUB12750
12580 IF FR=9 AND S1=10 THEN DRAW"BM241,127":GOSUB 12700
12582 IF FR=9 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,127":GOSUB 12710
12583 IF FR=9 AND C1=10 AND A1=10 THEN DRAW"BM207,99":GOSUB12760
12584 IF FR=9 AND A1<10 AND A1+A2=10 THEN DRAW "BM207,113":GOSUB 12730
12585 IF FR=9 AND A1=10 AND S1<10 THEN DRAW "BM207,113":GOSUB 12740
12586 IF FR=9 AND S1+S2<10 THEN DRAW"BM207,127":GOSUB 12750
12590 IF FR=10 AND S1=10 THEN DRAW"BM241,141":GOSUB 12700
12592 IF FR=10 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,141":GOSUB12710
12593 IF FR=10 AND C1=10 AND A1=10 THEN DRAW"BM207,113":GOSUB12760
12594 IF FR=10 AND A1<10 AND A1+A2=10 THEN DRAW "BM207,127":GOSUB 12730
12595 IF FR=10 AND A1=10 AND S1<10 THEN DRAW "BM207,127":GOSUB 12740
12596 IF FR=10 AND S1+S2<10 THEN DRAW"BM207,141":GOSUB 12750:GOTO 12800
12600 IF FR=11 AND S1=10 THEN DRAW"BM241,155":GOSUB 12700
12602 IF FR=11 AND S1<10 AND S1+S2=10 THEN DRAW"BM241,155":GOSUB12710
12603 IF FR=11 AND C1=10 AND A1=10 THEN DRAW"BM207,127":GOSUB12760
12604 IF FR=11 AND A1<10 AND A1+A2=10 THEN DRAW "BM207,141":GOSUB12730:GOTO12800
12605 IF FR=11 AND A1=10 AND S1<10 THEN DRAW "BM207,141":GOSUB 12740:GOTO 12800
12610 IF FR=12 AND S1=10 THEN DRAW"BM241,169":GOSUB 12700
12617 IF FR=12 AND C1=10 AND A1=10 THEN DRAW"BM207,141":GOSUB12760:GOTO12800
12618 IF FR=12 AND S1<10 THEN DRAW"BM207 ,141":GOSUB 12780:GOTO 12800
12630 GOTO 12031

```



```

12699 REM SCORING GRAPHICS
12700 AA$="X":GOTO 13000
12710 AA$="/":GOTO 13000
12730 AA$=STR$(A1+A2+S1+ST):ST=A1+A2+S1+ST:GOTO 13000
12740 AA$=STR$(A1+S1+S2+ST):ST=A1+S1+S2+ST:GOTO 13000
12750 AA$=STR$(S1+S2+ST):ST=ST+S1+S2:GOTO 13000
12760 AA$=STR$(C1+A1+S1+ST):ST=C1+A1+S1+ST:GOTO13000
12770 AA$=STR$(A1+S1+S2+ST):ST=ST+A1+S1+S2:GOTO13000
12780 AA$=STR$(S1+ST):GOTO 13000
12800 DRAW "BM215,184":AA$=STR$(ST):GOSUB 13000
12810 FOR Q=0TO2000:NEXT:CLS:PRINT@228,"YOUR SCORE WAS "ST:PRINT@ 288," PRESS 'Y
' TO START A NEW GAME.":FOR Q=0 TO 2000:NEXT
12820 A$=INKEY$:SCREEN1,1:IF A$="" THEN 12820
12830 IF A$<>"Y" THEN GOTO 12820 ELSE GOTO 28
13000 'CHAR-GEN
13001 FOR XX=1 TO LEN(AA$)
13002 RESTORE:LL=0
13003 READ LL$,CC$
13004 IF LL$=MID$(AA$,XX,1) THEN DRAW CC$:GOTO13006
13005 LL=LL+1:IF LL<48 THEN 13003
13006 NEXT:RETURN
13007 DATA " ", "BM+7,0"
13034 DATA "1", "BM+1,0;R1;NR1;U6;G1;BM+6,+5"
13035 DATA "2", "NR4;U1;E1;R1;E2;U1;H1;L2;G1;BM+7,+5"
13036 DATA "3", "BM+0,-1;F1;R2;E1;H2;E2;H1;L3;BM+7,6"
13037 DATA "4", "BM+3,0;U2;NR1;L3;U1;E3;D3;BM+4,3"
13038 DATA "5", "BM+0,-1;F1;R2;E1;U2;H1;L3;U2;R4;BM+3,+6"
13039 DATA "6", "BM+4,-5;H1;L2;G1;D4;F1;R2;E1;U1;H1;L3;BM+7,+3"
13040 DATA "7", "U1;E4;U1;L4;BM+7,+6"
13041 DATA "8", "BM+1,-0;H1;U1;E1;H1;U1;E1;R2;F1;D1;G1;NL2;F1;D1;G1;L2;BM+6,0"
13042 DATA "9", "BM+0,-1;F1;R2;E1;U4;H1;L2;G1;D1;F1;R2;BM+4,+3"
13043 DATA "/", "E6;BM+3,6"
13044 DATA "X", "E6;BM-6,0;F6;BM+3,0"
13045 DATA "0", "BM+1,0;H1;U4;E1;R2;F1;D4;G1;L2;BM+6,0"
13050 DATA "' ", "BM+1,-5;E2;BM+4,+7"
15000 FOR X=0 TO 10:NEXT X:RETURN
16000 IF S1=0 THEN B=14:PLAY"L16;G;P64;L8;O2;GFEDCBA":B=14:Y=0:S1=0 'GUTTER BAL
L
16005 RETURN
17000 GOSUB2000:GOSUB2010:GOSUB2000:GOSUB15000:GOSUB2000:GOSUB15000:GOSUB2000:GO
SUB2020:GOSUB2030:GOSUB2040:GOSUB2050:GOSUB2060:GOSUB2070:GOSUB2000:GOSUB2080:GO
SUB2090:GOSUB2100:Y=0:B=6:S1=10 'TITLE PAGE
17010 GOTO12030

```

\*\*\* COMPUTER TRIVIA! \*\*\*

1. The branch of scientific study concerned with simulating or emulating human-like thought processes in computer systems is called.....
2. What is the definition of "zap" in computer terms?
3. Keypunch is another name for what?

...ANSWERS FOR COMPUTER TRIVIA WILL BE FOUND ON THE LAST PAGE OF THIS ISSUE...

Beginner's Series Part III  
by David McNally

To conclude the tutorial I would like to tell you about some of the other features of the Color Computer that you can use to pep up your programs.

1. SOUND tone, duration - Sounds a specified tone for a specified duration.

The first thing I would like to talk about is SOUND commands. See Appendix A in your Getting Started With Color BASIC book. Look at the keyboard. Above each key is the tone (note) number for the computer. For example, to play a Middle C for 6/100ths of a second type:

```
SOUND 89,1
```

The note can be any number from 1-255. The second number (duration if you will) can be also from 1-255. A good example of using the SOUND commands is the Three Blind Mice song on page 34 of your Getting Started with Color BASIC book.

2. SET (x,y,c) - Sets a dot at a specified text screen position.

The second thing is graphics. These are very simple to use.

	0	1	2	3
0				
1				
2				

Look at the example above. You can see that the dot is set at coordinate 3,1. With this in mind you can draw on the computer, but just remember the top number is first and the side number is second. When setting dots on the Color Computer a third number is added. It is the color of the dot to be set. The numbers range from 0-8. Here is an example:

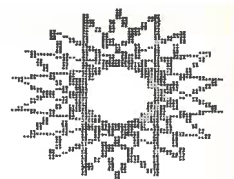
```
SET (6,2,5)
```

This sets a buff (white) dot at coordinate 6,2. The first number can be from 0-63 and the second number can be from 0-31. Try drawing a picture with this method. You can use the SET/RESET worksheet on the next page to plan out your pictures. Good Luck!

COLOR LOGO  
GRAPHICS PROGRAM

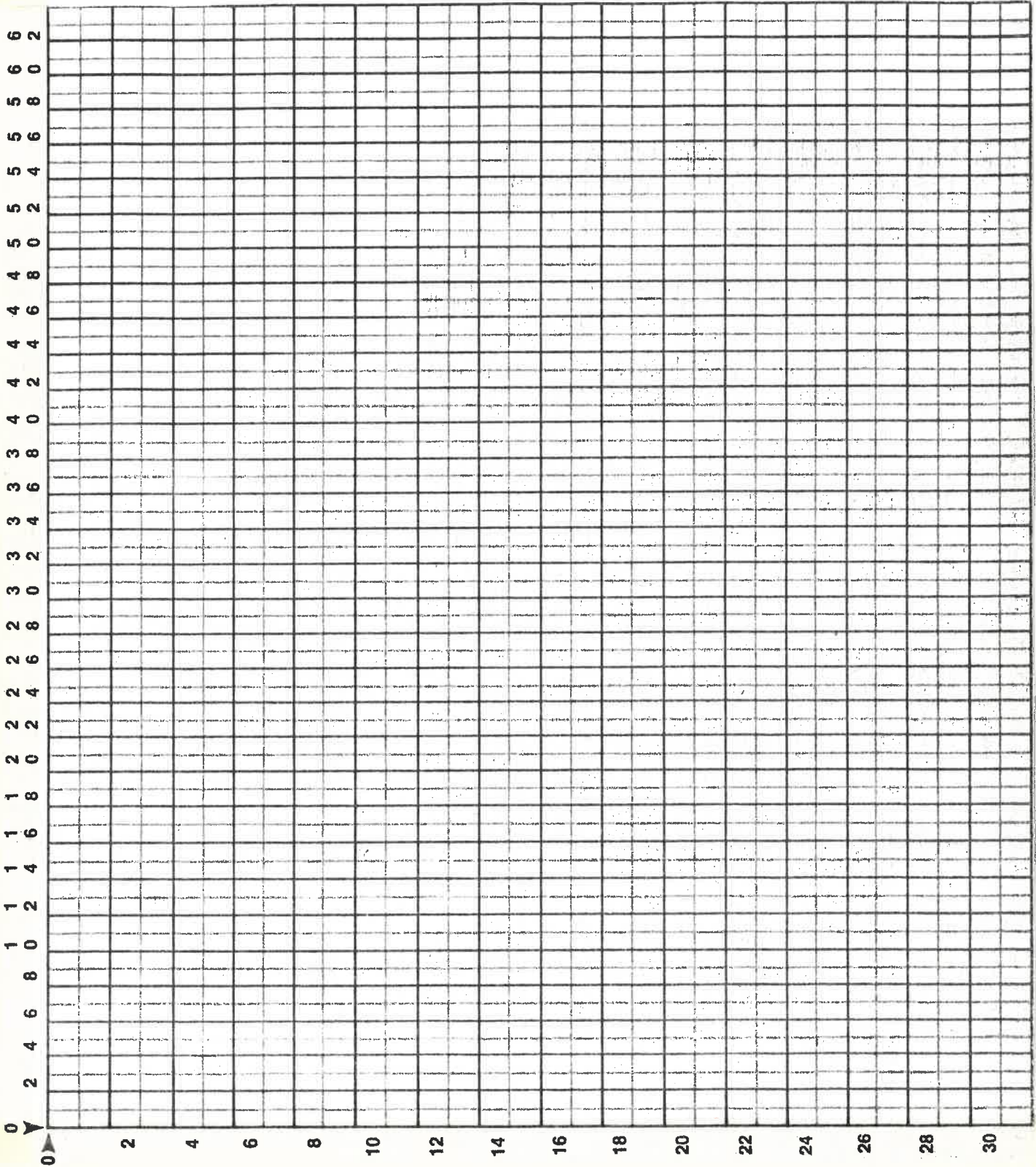
THE PROCEDURE: MULTI TRIANGLES

```
TO TRIANGLE  
  REPEAT 20(FD 60 RT 120 RT 20)  
  FD 60  
  HT  
END
```



TRIANGLE

# SET/RESET WORKSHEET (64 x 32)



TRS-80 COMPUTING ORDER FORM

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- \* POSTAGE COST TO SEND MAGAZINE.  
(APP. \$.93)

THANK-YOU

SIGNED.....AND.....

TRS-80 COMPUTING  
C/O JOE AHERN  
65 OAK ROAD  
CANTON, MA. 02021

# NEW RELEASES FROM TRS-80 COMPUTING



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ISSUES ON

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• CITY \_\_\_\_\_ STATE \_\_\_\_\_ .  
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• BONUS: YES NO .

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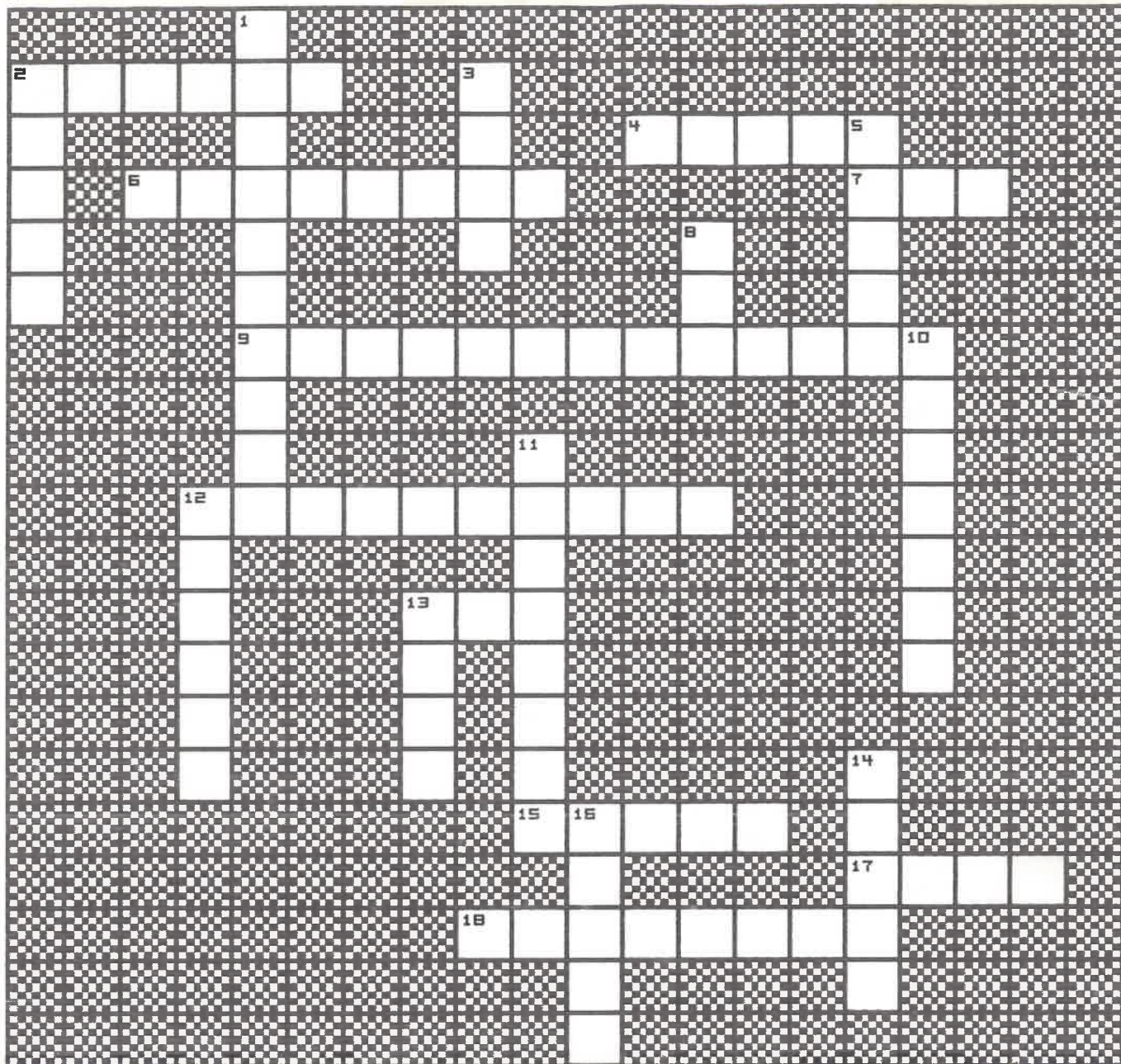
TRS-80 COMPUTING SOFTWARE

NEEDED	DESCRIPTION	PRICE
	1. INSIDE YOUR COMPUTER--THIS GAME MAKES YOU THE COMPUTER. TWO NUMBERS WILL BE SENT IN. YOU MUST ADD THE TWO NUMBERS AND SEND YOUR ANSWER OUT. SEND OUT THE WRONG ANSWER AND YOUR MICROCHIPS WILL BE BASHED IN BY THE ANGRY PERSON. COCO ONLY.	\$1.00
PRINTER TAPE PLAYER	2. PICTURE PLOTTER--YOU CAN PRINTOUT PICTURES YOU DRAW. YOU CAN ALSO SAVE AND LOAD YOUR PICTURES. HAS COLOR CHANGING AND TEXT ADDING MODES. COCO ONLY.	\$2.50
	3. SCREEN SAVER--THIS SUBROUTINE SAVES THE SCREEN, NOT ON TAPE OR DISK, BUT IN THE COMPUTER'S MEMORY! ADD IT TO YOUR DRAWING PROGRAMS. COCO ONLY	\$1.00
COCO-TAPE PLAYER C64/128- DISKDRIVE	4. DIARY KEEPER--TYPE IN YOUR PERSONAL THINGS AND SAVE THEM SAFELY ON TAPE (DISK IF YOU HAVE A C64/128). YOU CAN EVEN ENTER A SAFETY CODE THAT ONLY YOU KNOW! COCO AND C64/128 ONLY.	\$4.00 COCO \$6.00 C64
	5. COLOR TRIVIA--PLAY TRIVIA THE EASY WAY. THE COMPUTER KEEPS SCORE! HOW MANY ANSWERS CAN YOU GET? COMES WITH 60 QUESTIONS. (MORE AVAILABLE) COCO ONLY.	\$3.50
	6. MUSIC MACHINE I--TURN YOUR KEYBOARD INTO A PIANO. COCO ONLY.	\$1.50
BEST NEW PROGRAM FOR '89	7. DELUXE MUSIC MACHINE--TURN YOUR COCO INTO A MUSIC MACHINE. FEATURES PLAY/RECORD, SAVE/LOAD AND PRINT MODES. COCO ONLY.	\$4.95
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2. WRITING AND FIXING YOUR OWN BASIC PROGRAMS--THIS BOOK PROVIDES ALL YOU NEED TO KNOW TO WRITE AND FIX YOUR OWN SIMPLE BASIC PROGRAMS. COCO, APPLE, C64/128.	\$2.95
3. HOW TO WIN AT DUNGEONS OF DAGGORATH--ALL THE HINTS, TIPS, AND ANSWERS YOU NEED TO KNOW TO WIN DUNGEONS OF DAGGORATH. COCO ONLY.	\$2.95

PACKAGE DEAL--GET ALL THE PROGRAMS LISTED ABOVE PLUS A PICK OF ANY ONE OF THE WIZARD'S BOOKS FOR ONLY \$15.00!



ACROSS CLUES

- 2. A NUMBER SYSTEM WHICH USES 0'S AND 1'S.
- 4. MODULATOR AND DEMODULATOR
- 6. ONE MILLION BYTES
- 7. END OF FILE
- 9. A SMALL COMPUTER USED IN MOST HOMES.
- 12. WHEN A LINE OF TEXT CONTINUES ON THE NEXT LINE.
- 13. A DIGIT IN THE BINARY NUMBER SYSTEM WHOSE VALUE CAN BE EITHER 1 OR 0.
- 15. A BUG
- 17. ANY BIT, DIGIT, CHARACTER OR SIGNAL USED TO INDICATE THE OCCURRENCE OF A STATE.
- 18. A SMALL FLEXIBLE DATA STORAGE DEVICE.

DOWN CLUES

- 1. ONE WHO PROGRAMES
- 2. BEGINNERS ALL-PURPOSE SYMBOLIC INSTRUCTION CODE
- 3. INFORMATION RECIEVED FROM THE KEYBOARD, DISKDRIVE, TAPE SYSTEM, ETC.
- 5. TO COMBINE TWO OR MORE FILES
- 8. TO ERASE ALL OR PART OF A PROGRAM
- 10. TO START OVER
- 11. PROGRAMS THAT RUN THE COMPUTER
- 12. PROTECTED AREA OF TEXT ON THE SCREEN
- 13. THE SPEED DATA IS SENT OR RECIEVED
- 14. A FLAT, THIN SILICON SLICE USED FOR FABRICATING MANY INTEGRATED CIRCUITS' AT THE SAME TIME.
- 16. USUALLY TO SET TO THE ZERO CONDITION. ALSO A BUTTON USED TO RESTART THE COMPUTER.



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ATARI-GALAGA///ATARI-JUNGLE HUNT///ATARI-WINTERGAMES(SUPER CARTRIDGE)  
ATARI-ASTEROIDS(SUPER CARTRIDGE)///EPYX-SUMMER GAMES///ACTIVISION-SPACE SHUTTLE  
ATARI-XEVIIOUS(SUPER CARTRIDGE)///ATARI-STAR RAIDERS w/SPECIAL CONTROLLER  
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KISS, LIVE ANIMALIZE-\$19.95 MUSIC(CONCERT VIDEO)  
PINK FLOYD-THE WALL-\$15.95 MUSIC

I ALSO HAVE A NUMBER OF RECORD ALBUMS FOR \$2.00 APIECE (WRITE FOR A LIST)

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WHAT'S TRS-80 COMPUTING ON TAPE?

TRS-80 Computing on tape is simply all the programs that appear in TRS-80 Computing, for a particular month, are typed out and saved on tape for you. So all you need is your Color Computer, a cassette recorder, and the tape and your in business!

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# SOFTWARE REVIEW

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# R U S S I A N R O U L E T T E

FOR APPLE II AND C64/128

In this gambling game, a gun has 10 chambers. The computer picks, at random, which of the 10 chambers has the fatal bullet. If your answer matches the computer, then you lose. Enjoy!

APPLE II VERSION - RUSSIAN ROULETTE

```
1 ' RUSSIAN ROULETTE
2 ' TAKEN FROM A TANDY VERSION
4 HOME
5 FOR N=1 TO 10
10 PRINT"CHOOSE YOUR CHAMBER (1-10)"
20 INPUT X
30 IF X=INT(RND(1)*10) THEN 100
50 PRINT"---CLICK---"
60 NEXT N
65 HOME
68 PRINT:PRINT:PRINT:PRINT:PRINT
70 HTAB 12:PRINT"CONGRATULATIONS!!!"
80 HTAB 12:PRINT"YOU MANAGED"
90 HTAB 12:PRINT"TO STAY ALIVE"
95 END
100 REM
110 PRINT"BANG!!!!!!"
140 HOME
145 PRINT:PRINT:PRINT:PRINT:PRINT
150 HTAB 12:PRINT"SORRY, YOUR DEAD"
170 HTAB 12:PRINT"NEXT VICTIM PLEASE"
```

FOR THE C64/128 VERSION, MAKE THE FOLLOWING CHANGES:

1. Change all HOME commands to PRINT CHR\$(147)
2. Change all HTAB 12 commands to PRINT TAB(12) " --- PLACE TEXT HERE --- "

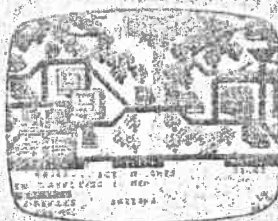


A peaceful morning is ripped by the staccato thunder of an enemy machine gun. In the distance, shrouded by the morning mists, you catch fitful glimpses of enemy activity as you shoulder your weapon and begin another assault. Another dive into the unknown where death waits to harvest the unwary, the unlucky and the damned.

With experience and skill your forces penetrate the dangerously silent village. Moving forward, nerves on fire with tension while your body soaks up adrenalin like a sponge, you await contact. Soon you find the enemy, the dance has begun. Some Joe screams INCOMING, dives for cover and you are

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...the state of the art simulation of company level combat in World War II. With infantry, tanks and various support weapons, your forces, be they German, Russian, British or American, face the enemy in a realistic simulation of one of the many small unit skirmishes that ended the Nazi terror and forged today's world.



A-2



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## ANSWERS TO COMPUTER CROSSWORD PUZZLE (PAGE 23)



NOTE: 2 DOWN SHOULD BE "BASIC"

## ANSWERS TO COMPUTER TRIVIA (PAGE 16)

1. ARTIFICIAL INTELLIGENCE (AI)
2. TO ERASE ALL OF OR PART OF A PROGRAM.
3. CARD PUNCH