

Iceberg

Your hull is badly damaged and you've no weapons to speak of. As you limp slowly home through treacherous iceberg-strewn waters, you become aware that an enemy ship is tailing you. Strangely it can detect you but not the icebergs, so your best chance is to lure it into hitting one.

Your computer will print a grid showing the position of your ship (Y), the enemy (Z) and the icebergs (*). You can move one space North, South, East or West each go. The enemy moves towards you by the most direct route (it can move diagonally too). If you move into any of the 8 positions surrounding the enemy, you will be captured, and if you hit an iceberg you will sink.

Can you escape?

Puzzle corner



Can you work out how to make the grid bigger?

Now work out how to add more icebergs too.



```
10 PRINT "ICEBERG"
20 DIM B(50,50)
30 LET PRINT(ABS(20-40))
40 FOR I=1 TO 50
50 LET B(I,INT(10000*I/5000))=1
60 NEXT I
70 LET SX=INT(10000*0.1)
80 LET SY=INT(10000*0.1)
90 IF B(SX,SY) <> 0 THEN
100 LET SX=SY=0
110 LET YX=SY
120 LET YX=SY
130 IF B(YX,SY) <> 0 THEN
140 LET B(YX,SY)=0
150 FOR I=1 TO 50
160 FOR J=1 TO 50
170 IF B(I,J) <> 0 THEN
180 LET ZI=I
190 LET ZJ=J
200 NEXT J
210 NEXT I
220 LET YI=SY
230 LET YJ=SX
240 FOR I=1 TO 50
250 FOR J=1 TO 50
260 IF B(I,J) <> 0 THEN
270 LET DI=ABS(I-YI)+ABS(J-YJ)
280 IF DI < DI1 THEN
290 LET DI1=DI
300 LET ZI=I
310 LET ZJ=J
320 NEXT J
330 NEXT I
340 LET YI=ZI
350 LET YJ=ZJ
360 PRINT "Y: "
370 FOR I=1 TO 50
380 PRINT "X: "
390 FOR J=1 TO 50
400 IF B(I,J) <> 0 THEN
410 PRINT " * "
420 ELSE
430 PRINT "   "
440 NEXT J
450 PRINT
460 NEXT I
470 PRINT "Z: "
480 FOR I=1 TO 50
490 PRINT "X: "
500 FOR J=1 TO 50
510 IF B(I,J) <> 0 THEN
520 PRINT " Z "
530 ELSE
540 PRINT "   "
550 NEXT J
560 PRINT
570 NEXT I
580 PRINT "Y: "
590 FOR I=1 TO 50
600 PRINT "X: "
610 FOR J=1 TO 50
620 IF B(I,J) <> 0 THEN
630 PRINT " Y "
640 ELSE
650 PRINT "   "
660 NEXT J
670 PRINT
680 NEXT I
690 PRINT "Z: "
700 FOR I=1 TO 50
710 PRINT "X: "
720 FOR J=1 TO 50
730 IF B(I,J) <> 0 THEN
740 PRINT " Z "
750 ELSE
760 PRINT "   "
770 NEXT J
780 PRINT
790 NEXT I
800 PRINT "Y: "
810 FOR I=1 TO 50
820 PRINT "X: "
830 FOR J=1 TO 50
840 IF B(I,J) <> 0 THEN
850 PRINT " Y "
860 ELSE
870 PRINT "   "
880 NEXT J
890 PRINT
900 NEXT I
910 PRINT "Z: "
920 FOR I=1 TO 50
930 PRINT "X: "
940 FOR J=1 TO 50
950 IF B(I,J) <> 0 THEN
960 PRINT " Z "
970 ELSE
980 PRINT "   "
990 NEXT J
1000 PRINT
1010 NEXT I
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```
1010 PRINT "Y: "
1020 FOR I=1 TO 50
1030 PRINT "X: "
1040 FOR J=1 TO 50
1050 IF B(I,J) <> 0 THEN
1060 PRINT " Y "
1070 ELSE
1080 PRINT "   "
1090 NEXT J
1100 PRINT
1110 NEXT I
1120 PRINT "Z: "
1130 FOR I=1 TO 50
1140 PRINT "X: "
1150 FOR J=1 TO 50
1160 IF B(I,J) <> 0 THEN
1170 PRINT " Z "
1180 ELSE
1190 PRINT "   "
1200 NEXT J
1210 PRINT
1220 NEXT I
1230 PRINT "Y: "
1240 FOR I=1 TO 50
1250 PRINT "X: "
1260 FOR J=1 TO 50
1270 IF B(I,J) <> 0 THEN
1280 PRINT " Y "
1290 ELSE
1300 PRINT "   "
1310 NEXT J
1320 PRINT
1330 NEXT I
1340 PRINT "Z: "
1350 FOR I=1 TO 50
1360 PRINT "X: "
1370 FOR J=1 TO 50
1380 IF B(I,J) <> 0 THEN
1390 PRINT " Z "
1400 ELSE
1410 PRINT "   "
1420 NEXT J
1430 PRINT
1440 NEXT I
```

Computers can decide whether an expression is true or false. If the answer is false they give it the value 0. If it is true, some computers give the value +1, others -1. Lines 290-320 have to be changed for some computers because of this.

