3-D Plot

3-D PLOT will plot the family of curves of any function. The function Z is plotted as "rising" out of the x-y plane with x and y inside a circle of radius 30. The resultant plot looks almost 3-dimensional.

You set the function you want plotted in line 5. As with any mathematical plot, some functions come out "prettier" than others. Here are some that work nicely:

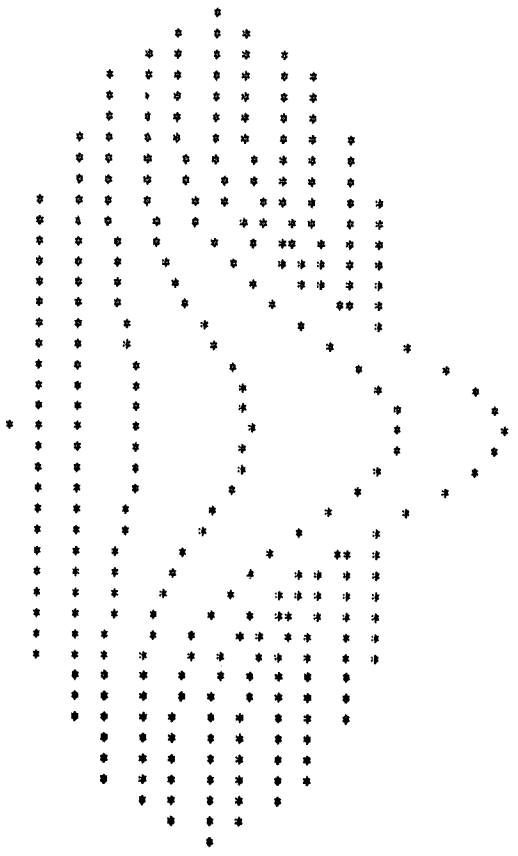
```
5 DEF FNA (Z) = 30*EXP (-Z*Z/100)
5 DEF FNA (Z)= SQR (900.01-Z*Z) *.9-2
5 DEF FNA (Z) = 30*(COS (Z/16)  2
5 DEF FNA (Z) = 30-30*SIN (Z/18)
5 DEF FNA (Z) = 30*EXP (-COS (Z/16) ) -30
```

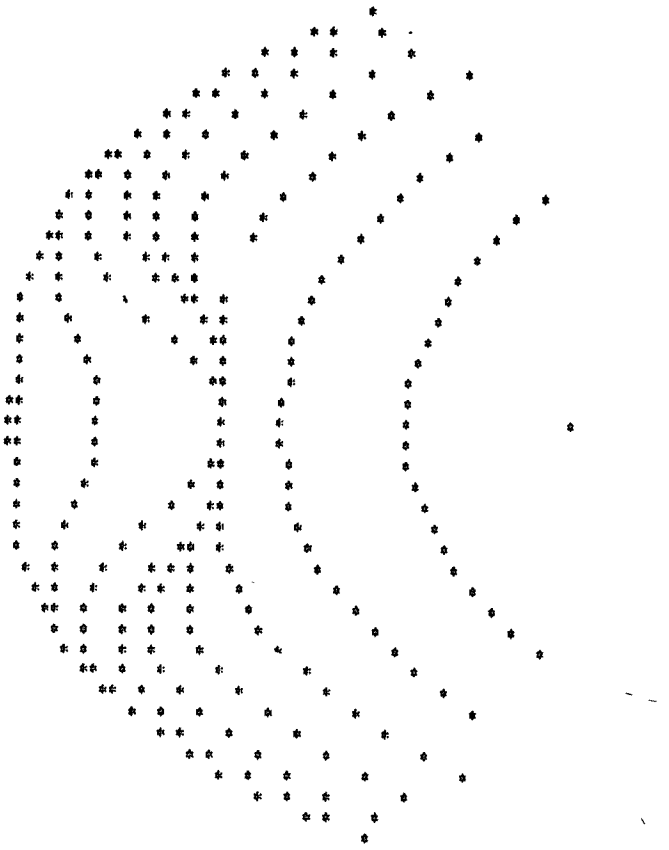
(Bessel function—Summerfeld's Integral)

```
5 DEF FNA (Z) = 30*SIN (Z/10)
```

The author of this amazingly clever program is Mark Bramhall of DEC.

```
                    3D PLOT
CREATIVE COMPUTING  MORRISTOWN, NEW JERSEY
```





```
1 PRINT TAB(32);"3D PLOT"
2 PRINT TAB(15);"CREATIVE COMPUTING  MORRISTOWN, NEW JERSEY"
3 PRINT:PRINT:PRINT
5 DEF FNA(Z)=30*EXP(-Z*Z/100)
100 PRINT
110 FOR X=-30 TO 30 STEP 1.5
120 L=0
130 Y1=5*INT(SQR(900-X*X)/5)
140 FOR Y=Y1 TO -Y1 STEP -5
150 Z=INT(25+FNA(SQR(X*X+Y*Y))-.7*Y)
160 IF Z<=L THEN 190
170 L=Z
180 PRINT TAB(Z);"*";
190 NEXT Y
200 PRINT
210 NEXT X
300 END
```