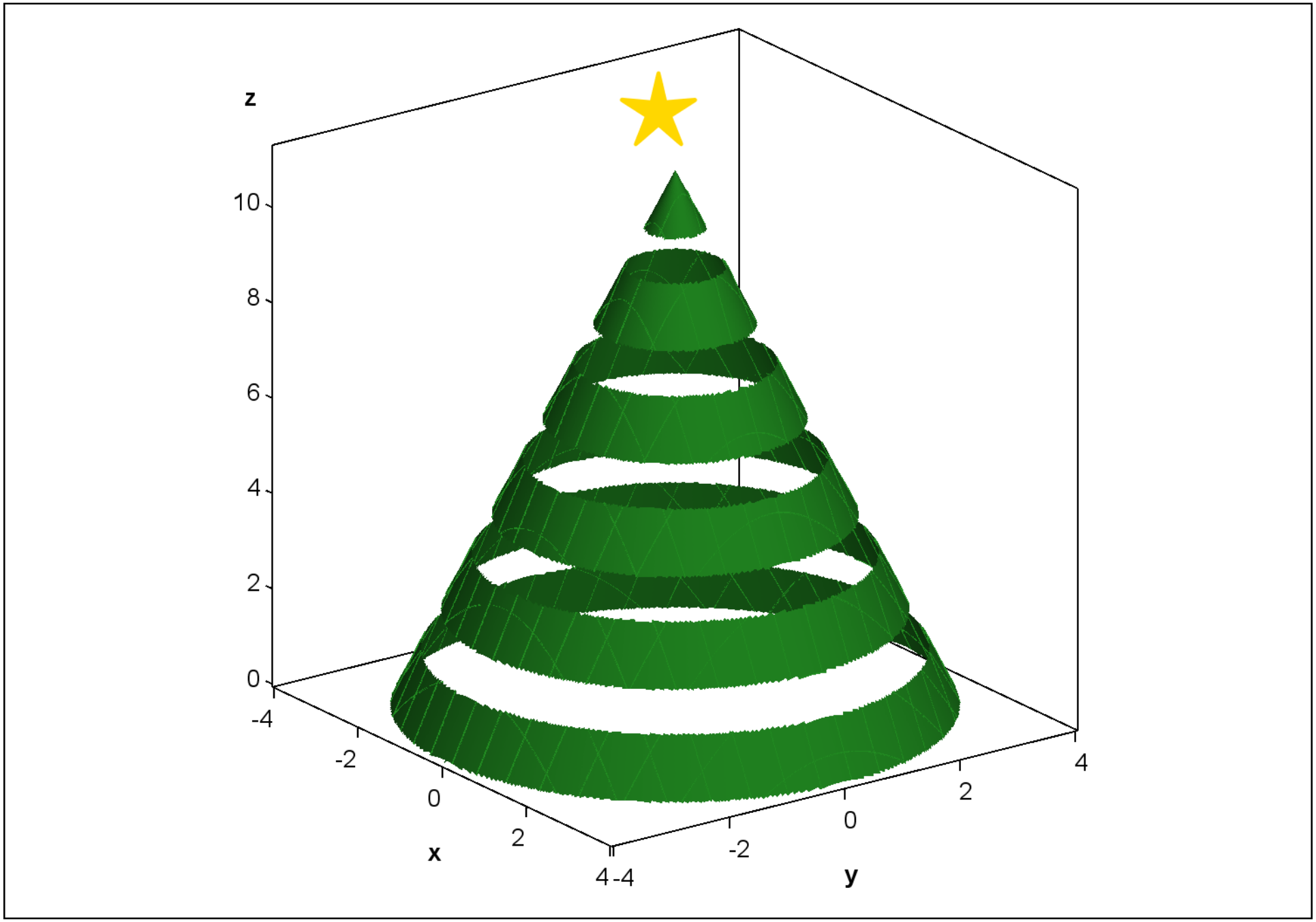
Example of SAS Weave

Code and Christmas Tree Graph

```
data xmastree;
r=4; h=11.25;
a=arsin(r/(r**2+h**2)**.5);
do y=-r to r by .02;
do x=-r to r by .02;

z=h-(x**2+y**2)**.5/sin(a)*cos(a);
if (x**2+y**2)**.5>4 or 1.25<z<2 or 3.25<z<4
or 5.25<z<6 or 7.25<z<8 or 9.25<z<10 then z=.;
output;

end;
end;
run;quit;

proc template;
define statgraph xmastree;
begingraph;

drawtext textattrs=(size=50pt COLOR=gold FAMILY="Arial Unicode MS")
{unicode '2605'x} /

anchor=topleft widthunit=percent x=46.5 y=99 justify=center ;
layout overlay3d / cube=false;

surfaceplotparm x=x y=y z=z / fillattrs=(color=forestgreen);
endlayout;
endgraph;
end;
run;quit;


proc sgrender data=xmastree template=xmastree;
run;quit;
```


z
10
8
6
4
2
0
-4
-2
0
2
4
x
4
2
0
-2
-4
y

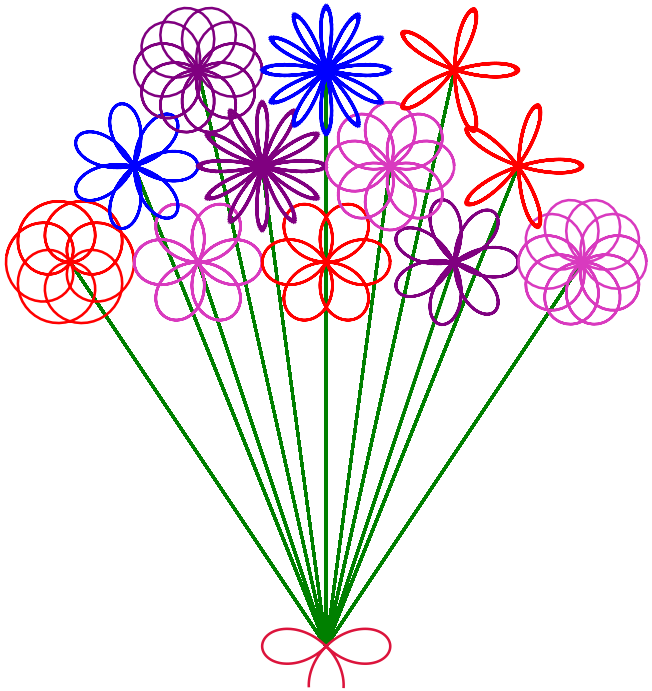
Code and Polar Roses Graph

```
%macro makecard(for=Mary,from=Joe);
data Roses;
array klist{11} _temporary_

(4, 5, 6, 1.5, 2.5, 1.333333, 2.33333, .75, 1.25, 1.2, .8333333);
do flower=1 to 12;
n = ceil( 11*rand("Uniform") );

/*pick a random number between 1 and 11*/
k=klist{n}; /*assign k to be the nth multiplier*/
/* draw the rose r=cos(k * theta) */

do theta = 0 to 12*constant("pi") by 0.1;
r = cos(k * theta);      /* generalized rose */

x = r*cos(theta);        /* convert to Euclidean coords */
y = r*sin(theta);
/*move the rose to the right spot*/
if flower <= 5 then

do;
cx=2*flower+1;
cy=9;
end;
else if 6<= flower<=9 then
do;
cx=(2*flower-8);

cy=10.5;
end;
else if 10<= flower<=12 then
do;
cx=(2*flower-15);
cy=12;
end;
x=x+cx;

y=y+cy;
group=flower;
output;
/*make the stem*/
group=-flower;
x=cx;
```

```
y=cy;
output;

x=7;
y=3;
output;
end;
end;
/*bow*/

do theta = constant("pi")*7.5/12 to constant("pi")*28.5/12 by 0.01;
r = cos(2 * (theta));       /* rose */

x = r*cos(theta);          /* convert to Euclidean coords */
y = r*sin(theta);
group=100;
if y<abs(x) then
do;

x=x+7;
y=y+3;
output;
end;
end;
run;quit;
proc sort data=roses;
by group;

title1 "Happy Valentines Day" ;
title2 "A Dozen Random Polar Roses" ;
run;quit;
proc sgplot data=Roses aspect=1 noautolegend

noborder nowall;
styleattrs datacontrastcolors=
(
green green green green
green green green green

green green green green
red  bippk red purple bippk
blue purple  bippk red purple  blue red
crimson
) datalinepatterns=(1);
```

```
series x=x y=y /group=group;
xaxis min=0 max=15 display=none;
yaxis min=0 max=15 display=none;

/*footnote "Lots of Love, &from";*/
footnote1 " ";
footnote3 " ";
footnote4 " ";
footnote5 " Polar Roses: r = cos(k*theta)";

footnote6 " Generated with the SAS System 9.4";
footnote7 "initial idea: http://blogs.sas.com/content/iml/2015/12/16/polar-rose.html";

run;quit;
title;
footnote;
%mend;
%makecard(for=Mary ,from=Joe);
```

Happy Valentines Day
A Dozen Random Polar Roses



Polar Roses: r = cos(k*theta)
Generated with the SAS System 9.4
initial idea: http://blogs.sas.com/content/iml/2015/12/16/polar-rose.html

Simple proc report

```
proc report data=sashelp.class;
cols name age sex height weight _row;
%greenbar;
run;quit;
```

Name	Age	Sex	Height	Weight
Alfred	14	M	69	112.5
Alice	13	F	56.5	84
Barbara	13	F	65.3	98
Carol	14	F	62.8	102.5
Henry	14	M	63.5	102.5
James	12	M	57.3	83
Jane	12	F	59.8	84.5
Janet	15	F	62.5	112.5
Jeffrey	13	M	62.5	84
John	12	M	59	99.5
Joyce	11	F	51.3	50.5
Judy	14	F	64.3	90
Louise	12	F	56.3	77
Mary	15	F	66.5	112
Philip	16	M	72	150
Robert	12	M	64.8	128
Ronald	15	M	67	133
Thomas	11	M	57.5	85
William	15	M	66.5	112