```matlab
clear, close
% Our Region is in a circle with radius 1 + sqrt(3)
nlines = 100; % Number of radial lines
R = sqrt(3)+1; % Radius of interest
% Make polar region
[r,t] = meshgrid(linspace(R/nlines,R,nlines),linspace(0,2*pi,500));
z = r.*exp(i*t);
% Convert polar region to cartesian
x = real(z); y = imag(z);
% Make Outer region NaN's so only inner region is numeric
% The below inequalities correspond to boundary of lines of our region
outerRegion = (((y>sqrt(3)*(x+1)+1)&(y>(x+1)/sqrt(3)+1))|(((y<-sqrt(3)*(x+1)-
1)&(y<-(x+1)/sqrt(3)-1))) ...
    |((y>-sqrt(3)*(x-1)+1)&(y>-(x-1)/sqrt(3)+1))|(((y<sqrt(3)*(x-1)-1)&(y<(x-
1)/sqrt(3)-1)))));
% Exclude outer region, make outer region NaN to hide in plots
z(outerRegion) = NaN;
% Set color order of current figure
set(gcf,'DefaultAxesColorOrder',jet(nlines))
% Plot z
subplot(211)
plot(z)
axis image % This will show figure proportionally
% Plot z^2
subplot(212)
plot(z.^2) % Plot z^2
axis image
```

From the figure we see that the order of point magnitude did not change, and
the phase of input was doubled, as expected.

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