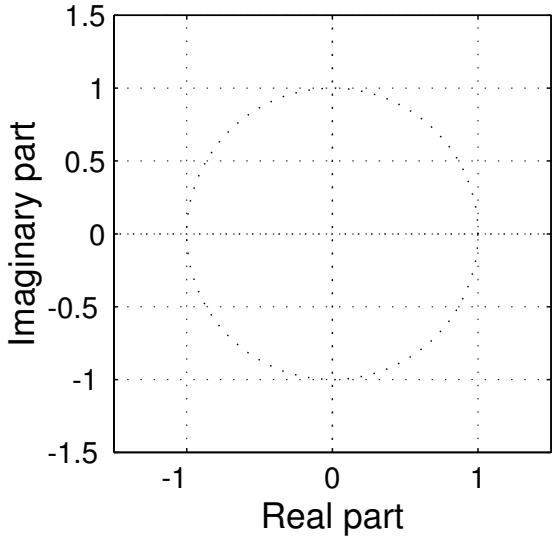
PROBLEM:

A discrete-time system is defined by the following system function:

$$H(z) = \frac{2 - 2z^{-1}}{1 + 0.64z^{-2}}$$

(a) Write down the difference equation that is satisfied by the input $x[n]$ and output $y[n]$ of the system.

(b) Determine *all* the poles and zeros of $H(z)$ and plot them in the z-plane.



(c) Fill in numbers for the vectors `bb` and `aa` in the following MATLAB computation of the frequency response of the system:

```
bb=[                    ];      aa=[                    ];

omegahat=-pi:pi/200:pi;
H=freqz(bb,aa,omegahat);
```