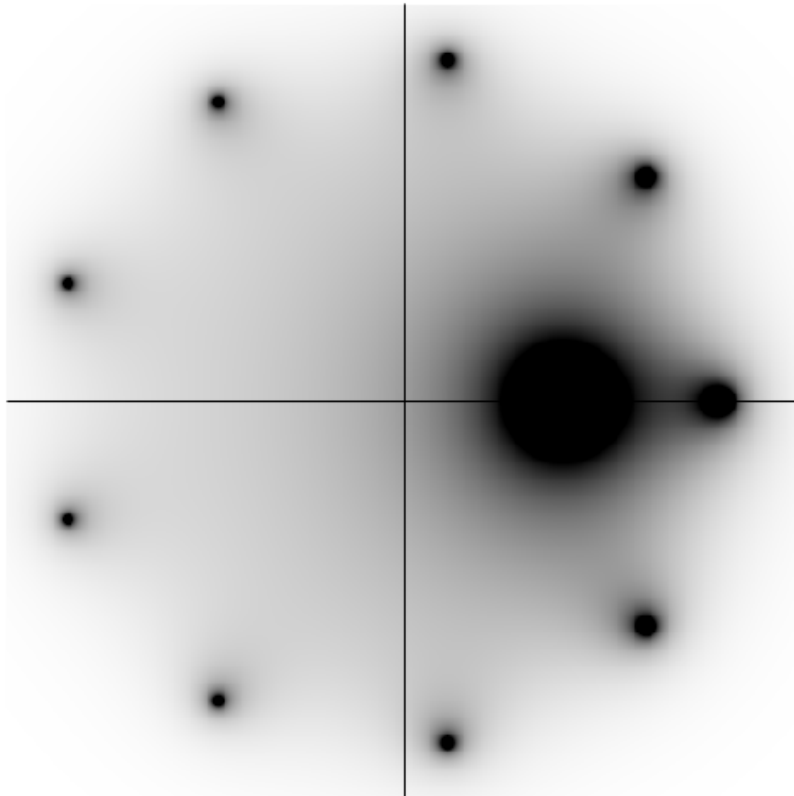


**AC Program V.1** In the style of the plots in Lecture 6, plot the GFs for the set of bitstrings having no occurrence of the pattern 000000001. Do the same for 0101010101.

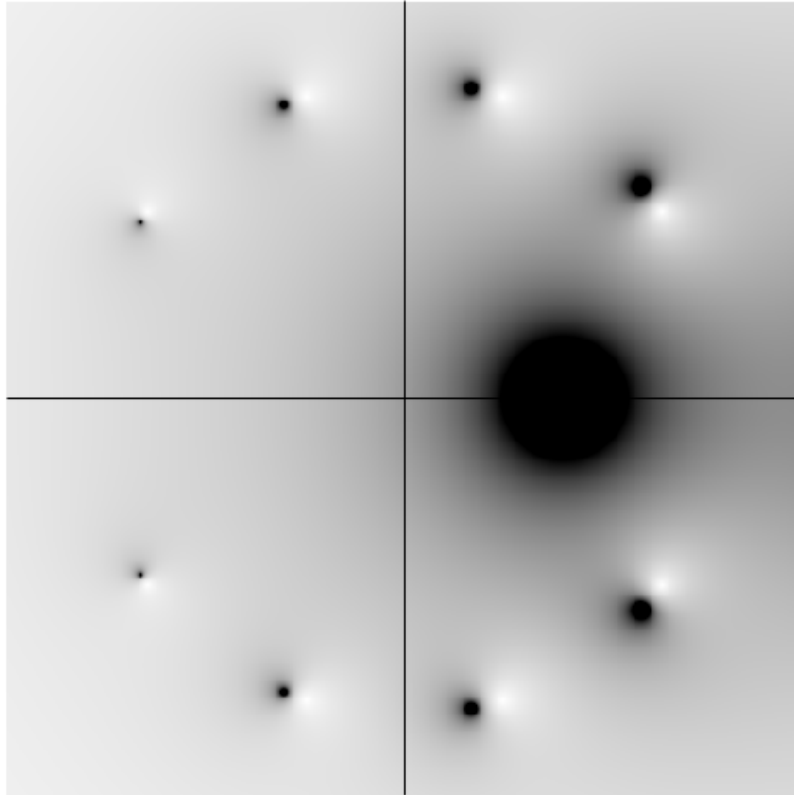
*Solution.* Bitstrings not containing the pattern 000000001:

$$B_{p_1}(z) = \frac{1}{z^{10} - 2z + 1}.$$



Bitstrings not containing the pattern 0101010101:

$$B_{p_2}(z) = \frac{1 + z^2 + z^4 + z^6 + z^8}{z^{10} + (1 - 2z)(1 + z^2 + z^4 + z^6 + z^8)}.$$



[ $B_{p_2}(z)$  also has one other pole that falls outside the boundaries of the plot, located at  $z \doteq 1.99852$ .]

My Java programs are submitted under “Additional files” as Bitstring1.java and Bitstring2.java.