$$L = 10$$

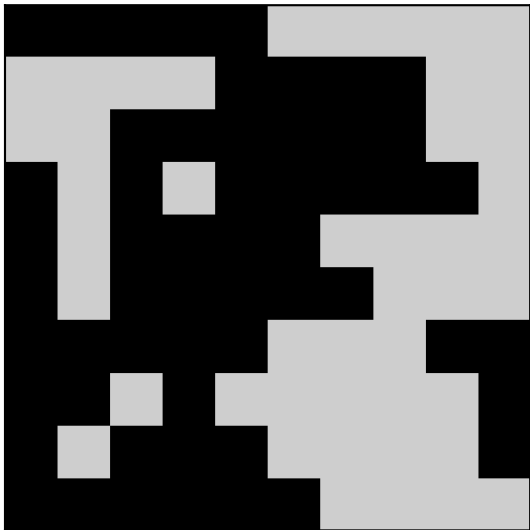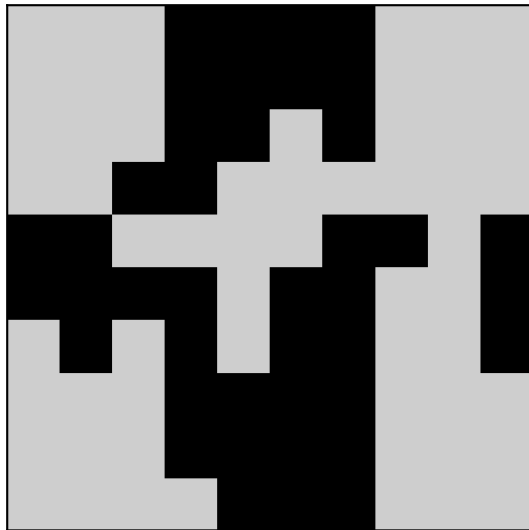$T = 3.5K > T_c$ $T = 2.9K \approx T_c$ $T = 1.0K < T_c$