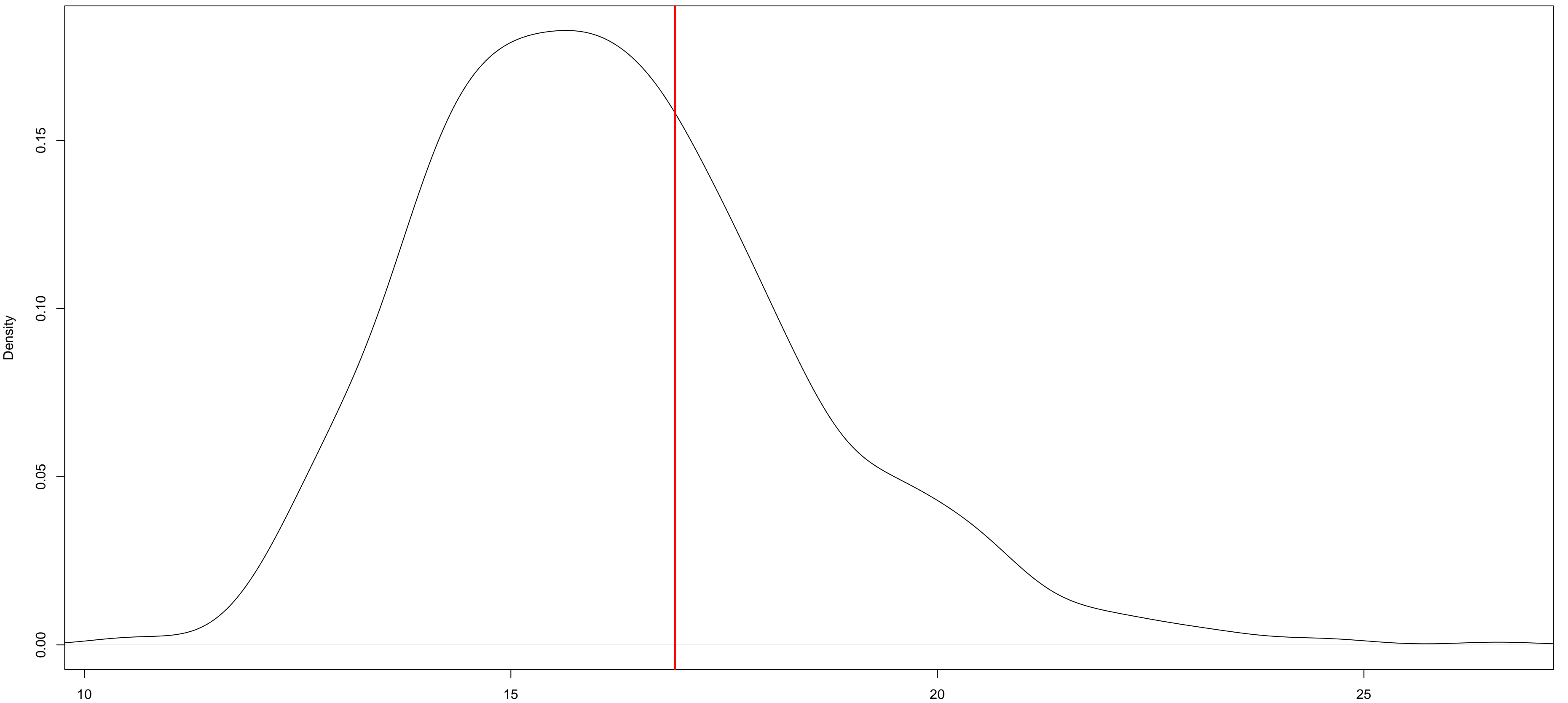Observed (red) vs random values (black)

N = 1000   Bandwidth = 0.4919