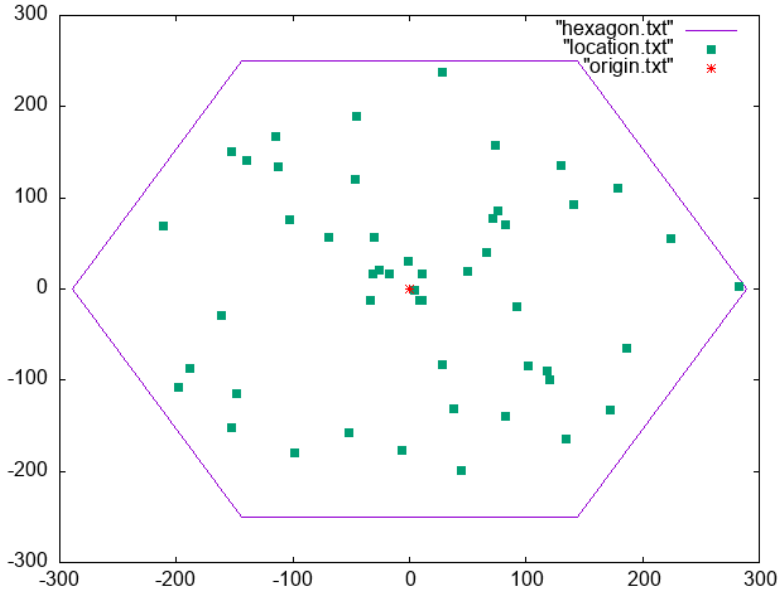
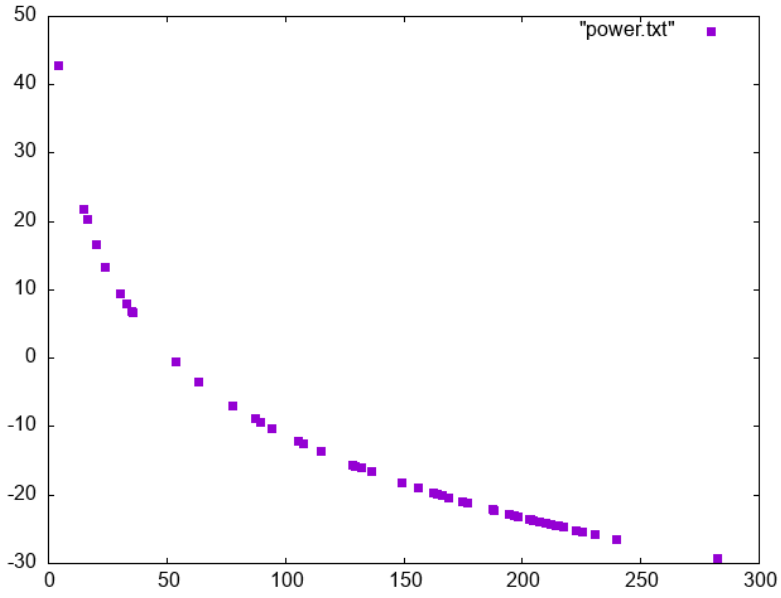
B08501011_hw2_report

Q1-1:



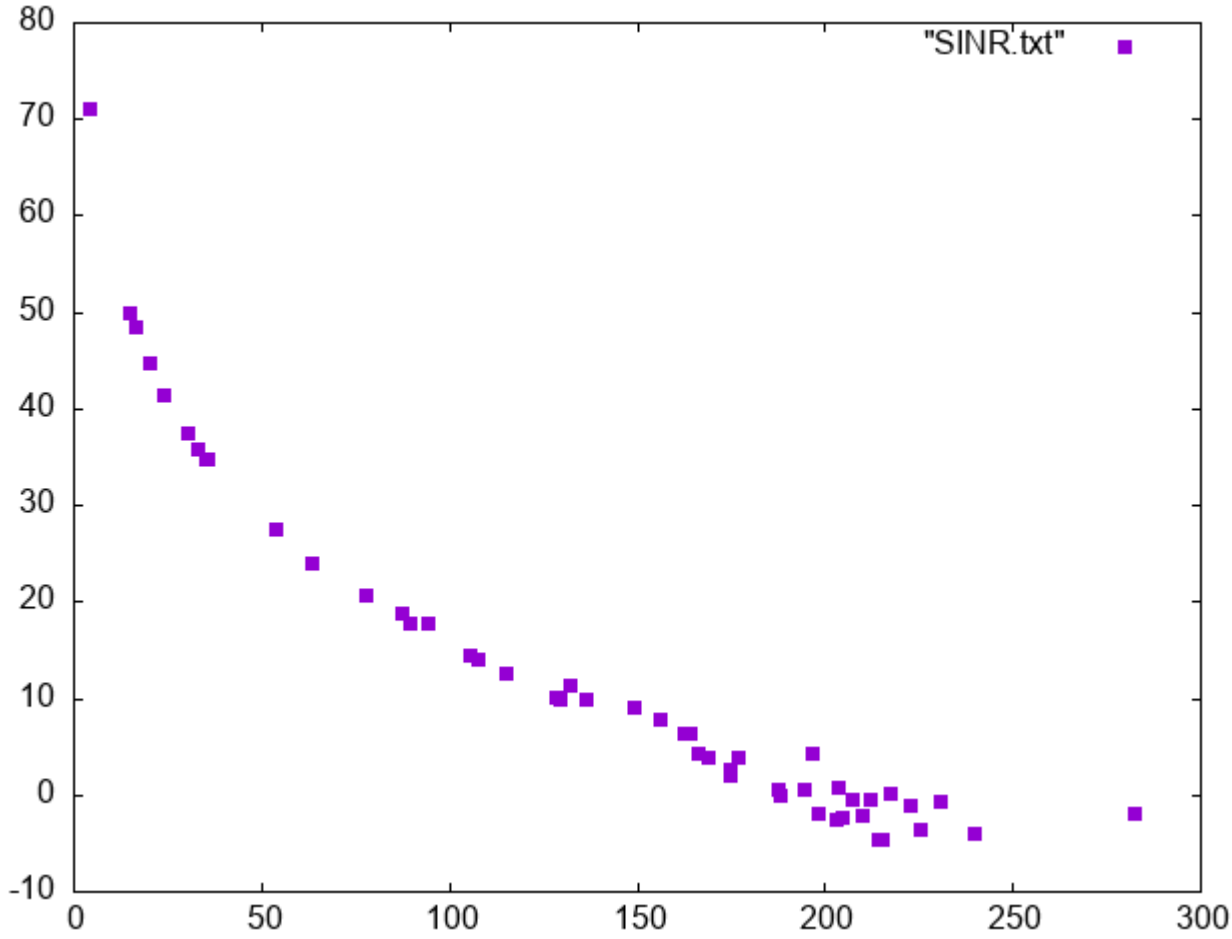
Q1-2:



Channel gain = $10 * \log((51.5 * 1.5)^2 / d^4)$

Received power = 33 dBm + 28 dB(two antenna gain) + channel gain – 30 (transfer to dBW)

Q1-3:



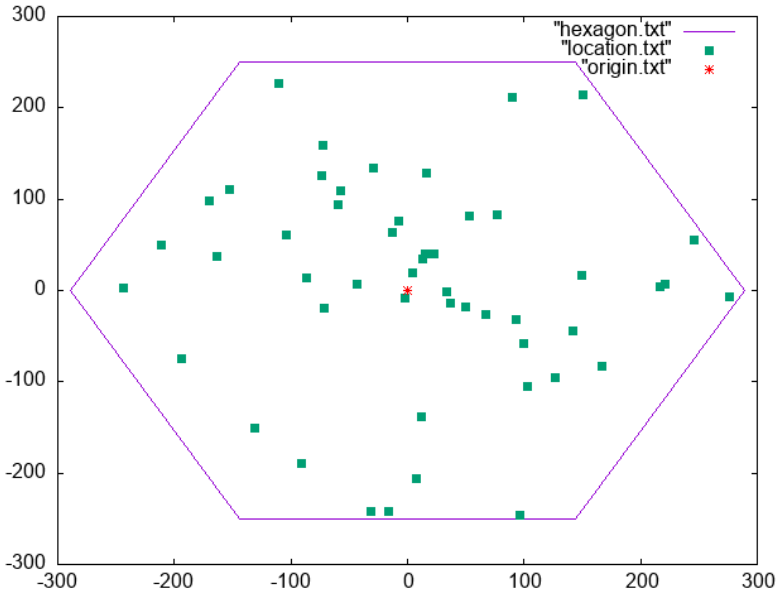
Calculate thermal noise and interference first:

Thermal noise = $1.38 * 300 * 10^{-13}$ (dBm)

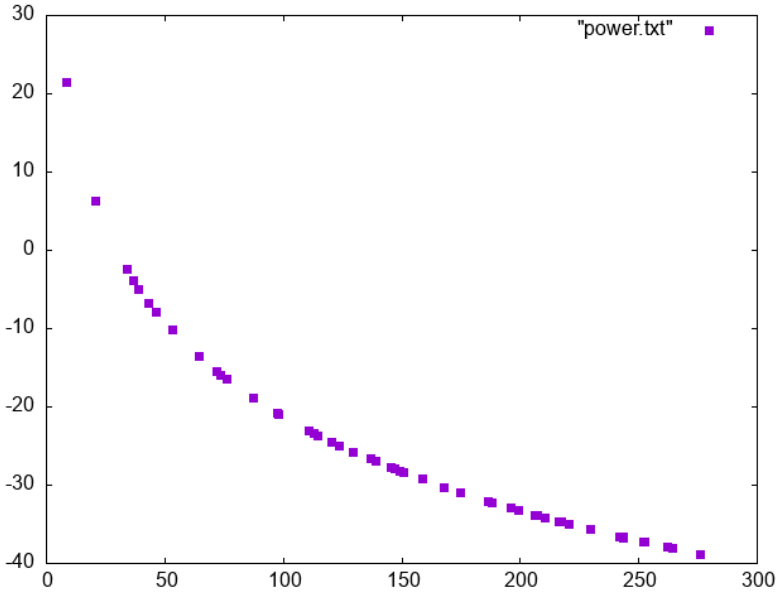
Interference (only calculate inner six base station) += $10^{6.1} * (51.5 * 1.5)^2 / d^4$ (d for distance of mobile to other base stations)

SINR = 61 + channel gain – 10 * log(thermal noise + interference)

Q1-1:

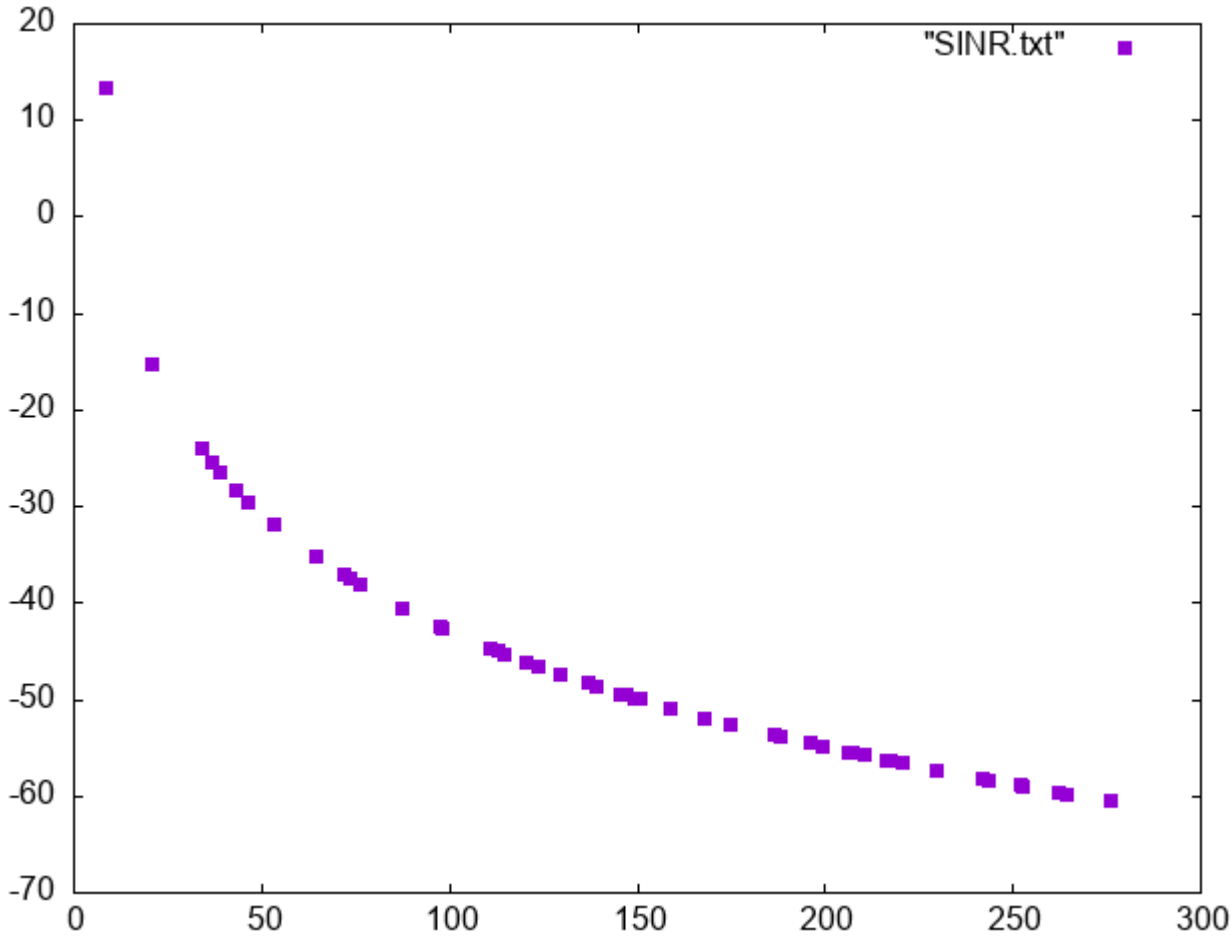


Q1-2:



Channel gain = $10 * \log((51.5 * 1.5)^2 / d^4)$

Received power = 33 dBm + 28 dB(two antenna gain) + channel gain – 30 (transfer to dBW)



Calculate thermal noise and interference first:

Thermal noise = $1.38 * 300 * 10^{-13}$ (dBm)

Interference += $10^{5.1} * (51.5 * 1.5)^2 / d^4$ (d for distance of each mobiles to base stations, excluding the one calculating now)

SINR = 51 + channel gain – 10 * log(thermal noise + interference)