Introduction to wireless, quick on paper exercises.

1. The access points we have for the workshop come with 400mW radios. Measured in dBm how much is that?

   dBm= 10*(10logP)

2. Assuming We have good line of sight from our tower what is the path loss on a 20Km link at 2.412Ghz?

   Lp (dB) =92.45 + 20 * (10log F) + 20 *(10log d)

3. How about at 5.4Ghz?

4. On our 20Km link how wide is the fresnel zone at it's widest point?

5. What is the link budget of a system with one 100mW radio with a 2dB gain antenna and one 30mW radio with a 3dB gain antenna over a distance of .1km (at 2.45ghz)? the receive sensitivity of both radios is -89dB?

6. What if the noise floor is -79dB?