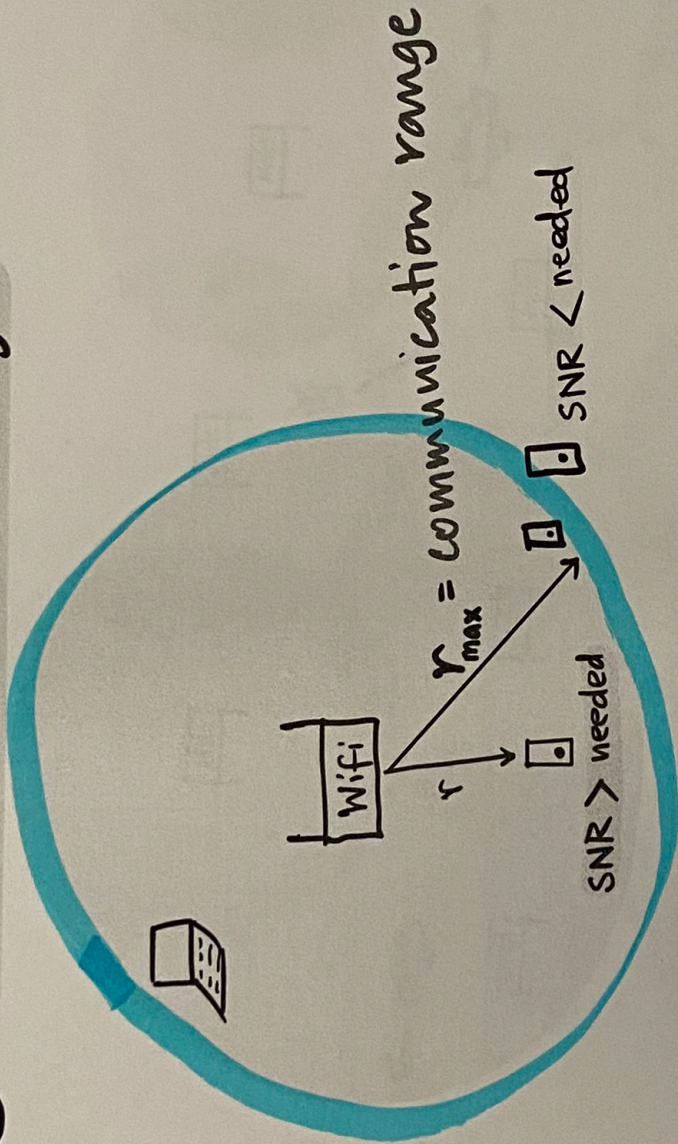


② Communication Range



Power attenuates $\frac{1}{r^2}$

Received Power $S = \frac{\text{Transmit Power}}{r^2}$

$$T = 100, \boxed{r = 5}$$

$$S = \frac{T}{r^2} = \frac{100}{5^2} = \frac{100}{25} = 4$$

$$\boxed{\text{SINR}} = \frac{S}{I+N} = \frac{4}{0+3} = \frac{4}{3} = 1.33$$

What is the communication range of wifi in this case?

P_t = Transmitted = 100
power

N = Noise power = 3

I = Interference = 0

SNR needed = 1.33

~~$$r^2 = \frac{100}{r^2} = 100$$~~

~~$$\text{SINR} = \frac{100}{r^2} = 1.33$$~~

~~$$r^2 = \frac{100}{25} = 4$$~~

~~$$\boxed{r = 5}$$~~