Special Problem II.B-29

In the circuit below, a fixed **attenuator** with attenuation A (dB) lies between an amplifier and a mixer.

If the attenuation A (dB) is **large** enough, the **mixer** will saturate (as P_{in} is increased) before the amplifier does.

If the attenuation A (dB) is **small** enough, the **amplifier** will saturate (as P_{in} is increased) before the mixer does.

1. Determine the value of attenuation A (dB) such that the mixer and amplifer will saturate at the **same** point (i.e., for the **same** value of P_{in}).

2. What is the **power** P_{in} when this simultaneous saturation occurs?