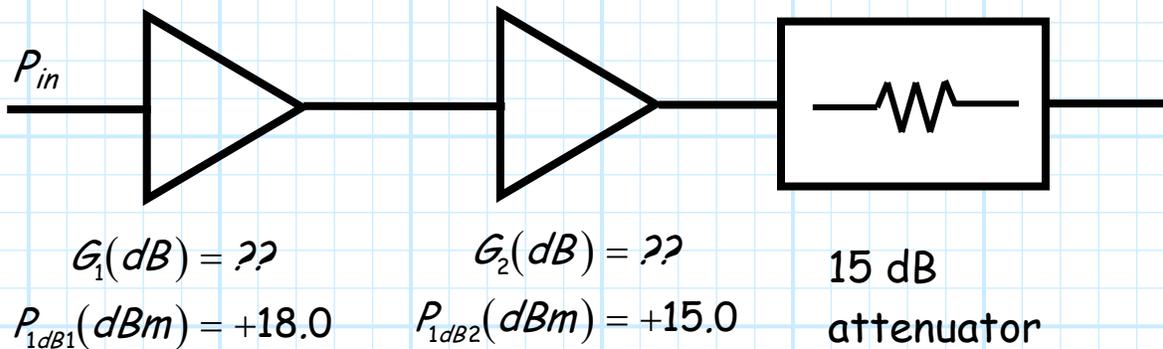
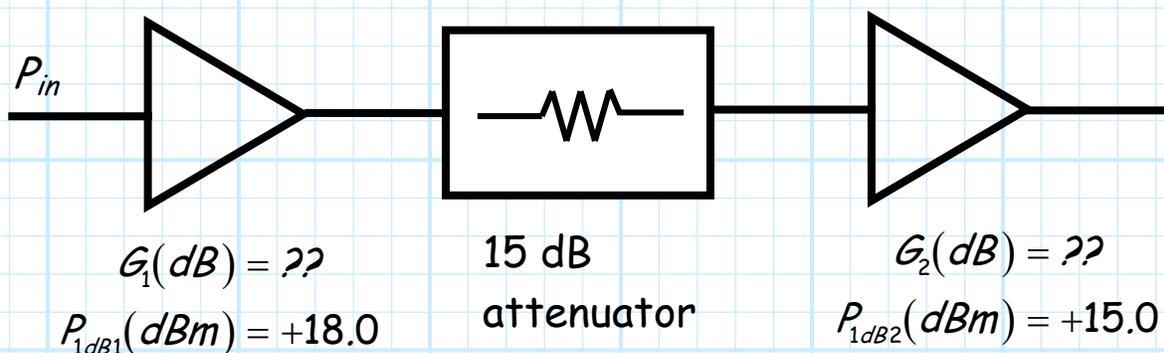


### Special Problem 4.D-8

A radio engineer finds that in the circuit below, the **second amplifier** will compress 1dB (i.e., saturate) when the circuit input power  $P_{in}$  (the power into the **first** amp!) is increased to **+2.0 dBm**. The first amplifier is **not** in saturation when  $P_{in}(dBm) = +2.0$ .



The radio engineer redesigns the circuit by moving the second amplifier to the end. She now finds that the **first** amplifier will compress 1 dB (i.e., saturate) when the circuit input power  $P_{in}$  is increased to **+13.0 dBm**. The second amplifier is **not** in saturation when  $P_{in}(dBm) = +13.0$ .



Determine the **gain** of each amplifier in decibels.