

Special Problem 4.C-10

An amplifier has at its input both signal and noise, with an SNR of **10.0 dB**.

The amplifier has at its output both signal and noise, with an SNR of **5.0 dB**.

The noise incident on the amplifier **input** has a noise temperature of **290 degrees Kelvin**.

The noise at the amplifier output has a noise temperature of **5800 degrees Kelvin**.

1. Determine the **gain** and **noise figure** of this amplifier.
2. Determine the noise temperature of the **output** noise, if the noise temperature of the noise incident on the amplifier input increases from 290 degrees Kelvin to **600 degrees Kelvin**.