

Special Problem 4.C-9

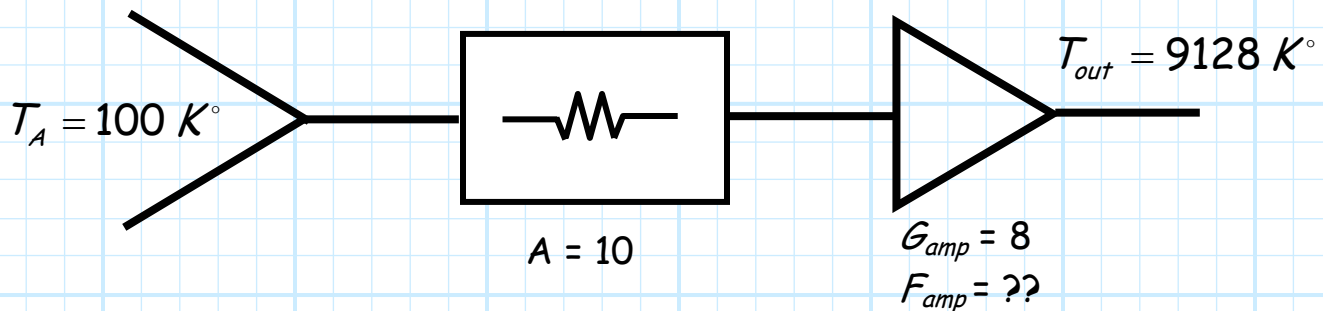
In the circuit below, an antenna is followed by an **attenuator** with attenuation **$A=10$** .

Following the attenuator is an **amplifier** with a gain of **$G=8$** .

The noise temperature at the **output of the amplifier** is $T_{out} = 9128 \text{ K}^\circ$

The **antenna noise temperature** is a frosty $T_A = 100 \text{ K}^\circ$

Note that all values in this problem are **linear** values (i.e., **none** are expressed in dB!).



Determine the **noise figure** of the amplifier.