

Special Problem 3.H-2

The scattering parameter S_{21} for a certain **low-pass** microwave filter has the form:

$$S_{21}(\omega) = \frac{A}{100 + j \frac{\omega}{10^6}}$$

Where A is some **real, positive** value.

The **cutoff frequency** for this filter is $\omega_c = 10^8$ rad/sec.

Determine the value of A .