If you haven’t already read Chap. 10, what are you waiting for? Please do that. If you have already read it, good! Don’t hesitate to read it again if you feel so inclined.

Solve the following problems from the textbook:

- Problem 10.21 For part (b), since we are considering fields (not power), decibels are given by \(20 \log_{10}\) of the field. (You may also want to keep in mind that one neper, 1 Np, corresponds to \(1/e\) which is a decay of 8.6859 dB. Thus \(\xi\) Np would correspond to \(\xi \times 8.6859\) dB of decay.)

- Problem 10.29

- Problem 10.30 You only need to prove this at a point. Thus you can assume

\[
E_s = E_r + jE_i \quad \text{and} \quad H_s = H_r + jH_i
\]

where the subscripts \(r\) and \(i\) indicate the real and imaginary parts, respectively. These fields would have corresponding time-domain representations of

\[
E = E_r \cos(\omega t) - E_i \sin(\omega t) \quad \text{and} \quad H = H_r \cos(\omega t) - H_i \sin(\omega t).
\]

(Also keep in mind that integrating a sine or cosine over one period gives zero.)

- Problem 10.37

- Problem 10.44

- Problem 10.47

Homework is due at the start of class on the due date. Late homework will not be accepted!