Problems from the book:

**Sec. 5.** (p. 62): 1, 2, 3

Additional problems:

**A1.** Compute the integral

\[ \int_{-\infty}^{\infty} \frac{1}{1 + x^4} dx \]

Note that you don’t have to do it with complex analysis; if you know how to do it with calculus, that is fine.

**A2.** Let \( f(z) \) be an entire function with the property that \( f(z) \) is real for all real \( z \). Show that \( f^{(n)}(z) \) has the same property, i.e., \( f^{(n)}(z) \) is real for all real \( z \).