EXERCISE C.2: Use (C.9) to show that if $x(t)$ is real and even, $x(-t) = x(t)$, then the Fourier series coefficients are real and $a_{-k} = a_k$.

Hint: Use Euler's relation to write $e^{-j\omega_0 kt} = \cos(\omega_0 kt) - j\sin(\omega_0 kt)$ in (C.9) and use the facts that $\cos(\cdot)$ is an even function and $\sin(\cdot)$ is an odd function. Also, the product of two even functions is even, and the product of an even function times an odd function is odd.

McClellan, Schafer, and Yoder, *DSP First, 2e*, ISBN 0-13-065562-7.
Prentice Hall, Upper Saddle River, NJ 07458.