A comment about Fourier coefficients: Fourier coefficients for a function $f \in L^2(-\pi, \pi)$ are at the lectures defined to be $c_n(f) = (f, e_n)$, where $e_n(x) = (2\pi)^{-1/2} e^{inx}$, $x \in [-\pi, \pi]$, whence $f \sim \sum_{n=-\infty}^{\infty} c_n(f) e_n$. The textbook uses Fourier coefficients denoted c_n, which satisfy $f(x) \sim \sum_{n=-\infty}^{\infty} c_n e^{inx}$. The two notions of Fourier coefficients are related via the formula: $c_n = (2\pi)^{-1/2} c_n(f)$. *In this exam, Fourier coefficients will always be of the first kind, that is* $c_n(f) = (f, e_n)$.