An alternating permutation \( w = a_1 \cdots a_n \) of \( \{1, 2, \ldots, n\} \) is a permutation such that \( a_i > a_{i+1} \) if and only if \( i \) is odd. If \( E_n \) (called an Euler number) denotes the number of alternating permutations of \( \{1, 2, \ldots, n\} \), then \( \sum_{n \geq 0} E_n \frac{x^n}{n!} = \sec x + \tan x \). We will discuss such topics as other occurrences of Euler numbers in mathematics, umbral enumeration of classes of alternating permutations, and longest alternating subsequences of permutations.