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Solutions of Exercise Sheet 6: Fourier Analysis

Exercise 1 *(Fourier Analysis)*

3. (Hint: Integration by parts.)

4. The relation
$$\mathcal{F}(f^{(k)})(\omega) = (2\pi i\omega)^k \mathcal{F}(f)(\omega)$$
for $k \in \{1, \dots, n\}$ follows by induction.

6. (Hint: Integration by substitution.)