Fourier Analysis

Assignment 4

20181018

Name : _____

Student ID : _____

1. Evaluate the integrals. Take n to be an integer.
   (a) $\int_0^{2\pi}(e^{it}+2e^{-2it})dt$
   (b) $\int \frac{1}{\cos t - i\sin t}dt$
2. Use the Weierstrass M-test to establish the uniform convergence of the given series, on the given interval.
   (a) $\sum_{k=1}^{\infty}\frac{\cos kx}{k^2}$; all x.
   (b) $\sum_{k=1}^{\infty}(\frac{x}{9})^k$; $|x|\leq 8$.

Reading Materials : Section 2.6, 2.9 of the textbook.