Norges teknisk–naturvitenskapelige universitet
Institutt for matematiske fag

TMA4120 Matematikk 4K H2010

Øving 3

Oppgavene er hentet fra Erwin Kreyszigs «Advanced Engineering Mathematics», 9. utgave.

1 What is the sum of the Fourier series in problem 11.1.13 at the points $x = 0, x = \pi/4, x = \pi/2, x = -3\pi/2$ and $x = \pi$. (Recall theorem 2.)

2 Assume that f has period 2π ($f(x + 2\pi) = f(x)$ for all x). Show that

$$\int_{-\pi}^{\pi} f(x)\,dx = \int_{2010}^{2010+2\pi} f(x)\,dx.$$

3 K9 11.1:13

4 K9 11.1:16

5 K9 11.2:8

6 K9 11.3:14

7 K9 11.5:9