SCHOOL OF MATHEMATICS AND PHYSICS

Fourier series

Activity

Calculate the Fourier series of f of the following functions:

1) $f(x) = \begin{cases} e^x, & -\pi < x < \pi \\ f(x+2\pi), & -\infty < x < \infty. \end{cases}$

2) $f(x) = \begin{cases} 3-2x, & -\pi < x < \pi \\ f(x+2\pi), & -\infty < x < \infty. \end{cases}$

3) $f(x) = \begin{cases} x+1, & 0 < x < 1 \\ f(x+1), & -\infty < x < \infty. \end{cases}$

Use the simulations from the website SciMS for visualising the Fourier series. Click on the link below or type the URL into your browser's address bar.

https://teaching.smp.uq.edu.au/scims/Num_analysis/Fourier.html