



LUND
UNIVERSITY

Centre for Mathematical Sciences
Mathematics, Faculty of Science

Linear Analysis
Thursday, 15 January 2015
Duration: 8:00–13:00

Answers

1. a) Convergent.
b) Divergent.
c) Convergent.

2. $y(x) = \sum_{k=0}^{\infty} \frac{(2k-1)!!}{(k!)^2} x^k, x \in \mathbf{R}.$

3. $u(x) = \frac{e^{-16t} \cos 2x + e^{-64t} \cos 4x}{2}.$

4. The sequence is uniformly convergent to 0.

5. a) $\frac{a \sin a\pi}{\pi} \sum_{-\infty}^{\infty} \frac{(-1)^n}{a^2 - n^2} e^{inx}.$