Övningstentamen i

Linjär Algebra och Analys del A

för Kf/Kb lp I - 00/01

FACIT

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1. (a) See textbook.

   (b) $\frac{1}{2\sqrt{x}}$

2. (a) Yes, since it is a decimal expansion, see textbook.

   (b) $N_\epsilon = 1/\sqrt{\epsilon}$ (e.g.)

   (c) 3/2

3. (a) —

   (b) Yes. You might as well rotate the angle $n\theta$ one time, as rotating the angle θ n times.

   (c)

$$\begin{aligned} \sin(\alpha+\beta) &= \sin\alpha\cos\beta + \cos\alpha\sin\beta \\ \cos(\alpha+\beta) &= \cos\alpha\cos\beta - \sin\alpha\sin\beta \end{aligned}$$

   (d) $[R(\theta)]^6 = \begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$ $[R(\theta)]^{12} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

4. (a) See textbook.

   (b) Not Lipschitz continous on $(2, 3]$ but Lipschitz continous on $[5, 9]$, $L = 2/49$.

   (c) $L = 2/\sqrt{3}$

5. (a) See textbook.

   (b) $x^1 = (4, -6)$

6. (a) See textbook.

   (b) $a = 5.5$