Elektromagnetizem
Rešitve

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1. Vektorska analiza

1.1 Vektorski operatorji

Naloga 1.1

$$\boldsymbol{\nabla} \cdot \mathbf{v} = 0$$

$$\boldsymbol{\nabla} \times \mathbf{v} = \begin{pmatrix} -6xz \\ 2z \\ 3z^2 \end{pmatrix}$$

Naloga 1.2

(a)

$$\nabla^2 T = -3 \sin x \sin y \sin z$$

(b)

$$\nabla^2 \mathbf{v} = \begin{pmatrix} 2 \\ 6x \\ 0 \end{pmatrix}$$

Naloga 1.3

$$\boldsymbol{\nabla} T = \begin{pmatrix} e^x \sin y \ln z \\ e^x \cos y \ln z \\ \dfrac{e^x \sin y}{z} \end{pmatrix}$$

$$\boldsymbol{\nabla} \times (\boldsymbol{\nabla} T) = \begin{pmatrix} \dfrac{e^x \cos y}{z} - \dfrac{e^x \cos y}{z} \\ \dfrac{e^x \sin y}{z} - \dfrac{e^x \sin y}{z} \\ e^x \cos y \ln z - e^x \cos y \ln z \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$$