biharmonic equation

Canonical name	BiharmonicEquation
Date of creation	2013-03-22 16:03:19
Last modified on	2013-03-22 16:03:19
Owner	perucho (2192)
Last modified by	perucho (2192)
Numerical id	9
Author	perucho (2192)
Entry type	Definition
Classification	msc 31B05

Definition. 1. *A real-valued function* $V : \mathbb{R}^n \to \mathbb{R}$ *of* http://planetmath.org/http://planetma
C^4, *and satisfying the equation*

$$\nabla^4 V = 0, \tag{1}$$

also defines a biharmonic function, and (1) is called the biharmonic equation. Biharmonic operator is defined as

$$\nabla^4 := \sum_{k=1}^{n} \frac{\partial^4}{\partial x_k{}^4} + 2 \sum_{k=1}^{n-1} \sum_{l=k+1}^{n} \frac{\partial^4}{\partial x_k{}^2 \partial x_l{}^2}.$$