

MAT-1034X Insinöörimatematiikka 4 (2006) kaavaliite

1. $\mathbf{T}(t) = \frac{\mathbf{r}'(t)}{\|\mathbf{r}'(t)\|}, \quad \mathbf{N}(t) = \frac{\mathbf{T}'(t)}{\|\mathbf{T}'(t)\|}$

2. $s = \int_a^b \|\mathbf{r}'(t)\| dt$

3. $f(\mathbf{x}) \approx f(\mathbf{x}_0) + f'(\mathbf{x}_0)(\mathbf{x} - \mathbf{x}_0) + \frac{1}{2}(\mathbf{x} - \mathbf{x}_0)^T Hf(\mathbf{x}_0)(\mathbf{x} - \mathbf{x}_0)$

4. $f(x_0 + h, y_0 + k) = \sum_{j=0}^m \frac{1}{j!} \left(h \frac{\partial}{\partial x} + k \frac{\partial}{\partial y} \right)^j (f)(x_0, y_0) + \epsilon(h, k) \|(h, k)\|^m$

5. $\begin{cases} g(\mathbf{x}) = 0 \\ \nabla f(\mathbf{x}) + \lambda \nabla g(\mathbf{x}) = \mathbf{0} \end{cases}$

6. $\begin{cases} g(\mathbf{x}) = 0 \\ h(\mathbf{x}) = 0 \\ \nabla f(\mathbf{x}) + \lambda_1 \nabla g(\mathbf{x}) + \lambda_2 \nabla h(\mathbf{x}) = \mathbf{0} \end{cases}$