Sprawozdanie programu

$u_{i,j} = u(x_i, t_j) = u(i \cdot h, j \cdot k)$
$h = 0.1, k = 0.005$

Równanie Burgers'a

1. $u(x,0) = \sin(\pi x), \quad 0 < x < 1$

   $u(0,t) = u(1,t) = t > 0$

2. $u(x,t) = -2v\frac{\theta_x}{\theta}$

3. $\frac{\delta\theta}{\delta t} = v\frac{\delta^2\theta}{\delta x^2} \quad 0 < x < 1, \quad t > 0$

4. $\theta_x(o,t) = \theta_x(1,t) = 0 \;\; t > 0$

5. $\theta(x,t) = a_0 + \sum_{n=1}^{\infty} a_n \exp(-n^2\pi^2 vt)\cos(n\pi x)$

6. $a_0 = \int_0^1 \exp\{-2(\pi v)^{-1}\,(1-\cos(\pi x))\}dx$

   $\mathrm{a}_n = 2\int_0^1 \exp\{-(2\pi v)^{-1}\,[1-\cos(n\pi x)]\}dx \quad (n = 1,2,3,\ldots)$

7. $u(x,t) = 2\pi v\frac{\sum_{n=1}^{\infty} a_n \exp(-n^2\pi^2 vt)n \;\; \sin(n\pi x)}{a_0+\sum_{n=1}^{\infty} a_n \exp(-n^2\pi^2 vt\cos(n\pi x))}$