Claim $h = \frac{1}{5}$: $R = [0, \frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}, 0]$

P2. $Lu = -u'' + \frac{1}{\Sigma}u = \frac{1}{\Sigma}x = f(x)$

$c = \frac{1}{\Sigma}$

$b = 0$

$h = \frac{1}{5}$

$\Sigma = 10^{-10}$

$r_i = \frac{1}{h^2} + \frac{b_i}{2h} = 25$, $S_i = \frac{2}{h^2} + c_i = 10^{\circ} + 50$

$t_i = \frac{1}{h^2} - \frac{b_i}{2h} = 25 - 0 = 25$

So $L^h = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ -t_i & S_i & -t_i & 0 & 0 & 0 \\ 0 & -t_i & S_i & -t_i & 0 & 0 \\ 0 & 0 & -t_i & S_i & -t_i & 0 \\ 0 & 0 & \cancel{0} & -t_i & S_i & -t_i \\ 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$ $R_h^f = \begin{pmatrix} 0 \\ \frac{1}{5\Sigma} \\ \frac{2}{5\Sigma} \\ \frac{3}{5\Sigma} \\ \frac{4}{5\Sigma} \\ 0 \end{pmatrix}$