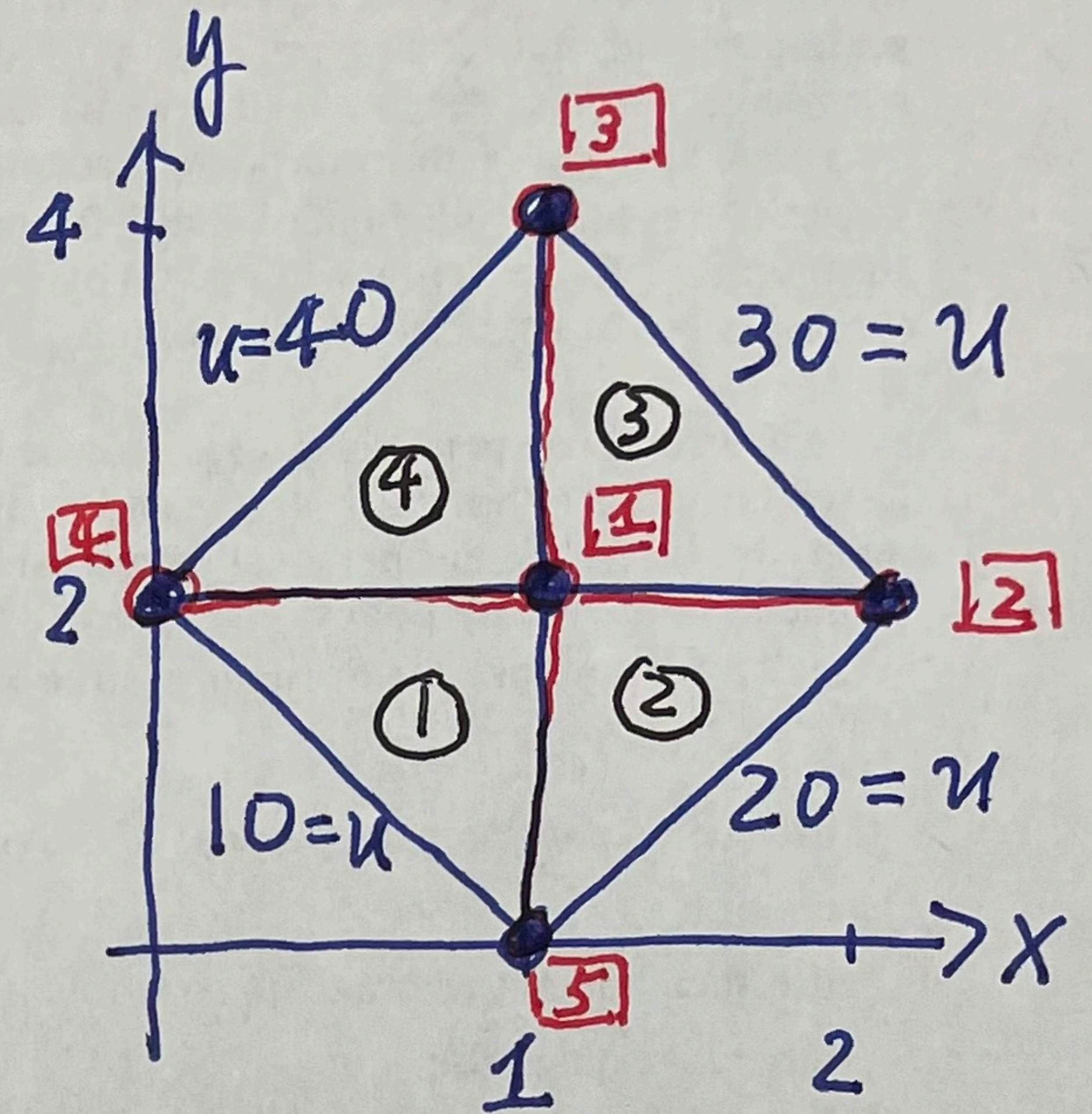# HW #8

Consider the PDE problem

$$-(U_{xx} + U_{yy}) + 3U = 0, \quad (X, Y) \in \Omega,$$

where Ω and boundary condition are shown in the Figure.

Use the Assembley method to find the solution at Node ①.

Hint:
$$k_{ij} = \begin{cases} \frac{1}{45}[b_i b_j + c_i c_j] + 3 \cdot 2 \cdot S \cdot \frac{2!}{4!}, & i = j \\ \frac{1}{45}(b_i b_j + c_i c_j) + 3 \cdot 2 \cdot S \cdot \frac{1}{4!}, & i \neq j \end{cases}$$