

2024秋，有限元方法II，作业3

交作业时间：2024/11/12

The Mathematical Theory of Finite Element Methods:

- Chapter 5: 5.x.8, 5.x.9, 5.x.16, 5.x.17, 5.x.21
- Chapter 10: 10.x.3, 10.x.4, 10.x.7, 10.x.11, 10.x.15, 10.x.16

Supplementary Questions:

1. Conduct the duality argument for the IPDG scheme

$$a_h^-(u_h, v_h) = (f, v_h) \quad \forall v_h \in V_h,$$

where $V_h = \{v \in L^2(\Omega) : v|_T \in \mathcal{P}_1(T) \ \forall T \in \mathcal{T}_h\}$.