- Some definitions

  - a method is called consistent if the truncation error $\tau^h \longrightarrow 0$ as $h \longrightarrow 0$

    - in the example, we had that $\tau^h \approx C_t h^2$

      $\Rightarrow$ the discretization method is consistent

  - a method is called stable if $\|L_h^{-1}\| \approx C_\ell$ where $C_ell > 0$ is a constant independent of h

    - it can be shown that the solution operator in the example satisfies this inequality

      $\Rightarrow$ the discretization method is stable

  - a method is called convergent if $\|e_h\| = \|u - u^h\| \longrightarrow 0$ as $h \longrightarrow 0$

    - because in the example we have $\tau^h \approx C_t h^2$ and $\|L_h^{-1}\| \approx C_\ell$, we have that $\|e_h\| \approx \|L_h^{-1}\| |\tau^h| \leq C_t C_\ell h^2$

      $\Rightarrow$ the discretization method is convergent