

Bentzen 10/11

$$\frac{d^2 \phi}{dx^2} = 4\pi g p(x)$$

$$\phi(0) = 5$$

$$\phi(3) = 7$$

$$p(x) = \begin{cases} 0 & x \in [0, 1] \\ 1 & x \in (1, 2] \\ 0 & x \in (2, 3] \end{cases}$$

$$\phi'' = 4\pi g p(x) = f(x)$$

$$\phi'' v = f(x) v \quad v \in V : v(0) = 0, v(3) = 0$$

$$\int_0^3 \phi'' v dx = \int_0^3 f(x) v dx$$

$$\phi' v \Big|_0^3 - \int_0^3 \phi' v' dx = \int_0^3 f(x) v dx$$

0

$$- \int_0^3 \phi' v' dx = \int_0^3 f(x) v dx$$

$$- \int_0^3 \phi' v' dx = \int_0^3 4\pi g p(x) v dx$$

$$\begin{cases} \tilde{u}(0) = 5 \\ \tilde{u}(3) = 7 \end{cases}$$

$\Downarrow$

$$\phi = \tilde{u} + w \quad \tilde{u}(x) = \frac{2}{3}x + 5$$

$$B(\phi, v) = L(v)$$

$$B(w, v) = L(v) - B(\tilde{u}, v) = \tilde{L}(v)$$

znajdź takie  $w \in V$  takie że dla  $\forall v \in V$  zachodzi równość powyższa.