

$$Sx: y_{xx} = \frac{1}{4} y_{xx}$$

$$0 < n < 2$$

$$y(x) = C_1 + C_2 \sin(\pi x)$$

$$y'(x) = C_2 \pi \cos(\pi x)$$

$$y''(x) = -C_2 \pi^2 \sin(\pi x)$$

Find Fourier series of $f(x)$.

Soln:

$$A_n = \frac{2}{L} \int_0^L f(x) \sin\left(\frac{n\pi}{L}x\right) dx$$

shortage

$$f(x) = \frac{4}{\pi} \sin(2\pi x)$$

