# Problem Set - 05

29/04/2020

1. Find the solution by Green's function method for $y'' + y = x$, in $x \in [0, \pi/2]$, with boundary conditions, $y(0) = y(\pi/2) = 0$.

2. Find the solution by Green's function method for $y'' = x^2$, $x \in [0, 1]$, with boundary conditions, $y(0) = y'(1) = 0$.

3. Find the Green's function for the boundary value problem, $y'' - y = f(x)$ with boundary conditions, $y(\pm\infty) = 0$.

4. Construct the Green's function for the problem $y'' + \omega^2 y = f(x)$, for $0 \leq x \leq 1$, and $y(0) = 0 = y(1)$, with $\omega \neq 0$.

5. Construct first the Green's function and then the solution for the problem, $y'' - y = \sin x$, for $-1 \leq x \leq 1$ and boundary conditions, $y(-1) = 1$ and $y'(1) = 2$.