Consider the function f(x) = cos x , 0 < x < π, as a periodic function of period π.

Plot the function on -2π < x< 2π, and find its Fourier series.

Now consider the odd periodic extension of f(x). Plot f(x) on -2π < x< 2π and find its Fourier sine series.

Finally consider the even periodic extension of f(x). Plot f(x) on -2π < x< 2π and find its Fourier cosine series