

Name:

1. Find the Fourier series for the function  $f$  with period  $2\pi$  defined on the interval  $[-\pi, \pi]$  by:

$$f(x) = \begin{cases} \pi, & |x| \leq \frac{\pi}{3} \\ -\pi, & \frac{\pi}{3} < |x| \leq \pi \end{cases}$$

2. Describe the convergence of the Fourier series in the previous problem: for which values of  $x$  does the series converge, and for those  $x$ , to what value does the series converge?