

**MATH 19 RECITATION**  
**1 DECEMBER 2016**  
**BROWN UNIVERSITY**  
**INSTRUCTOR: SAMUEL S. WATSON**

1. Find the Fourier series for  $|\sin x|$ .

2. Find the Fourier series for the function which is equal to  $x$  on  $[0, \pi)$  and  $2\pi - x$  on  $[\pi, 2\pi]$ .

3. Differentiate the series you obtained in the previous exercise term-by-term and verify that the resulting series is the Fourier series of the derivative of  $f$ .