

# MAT 321 Homework 1

Spring 2019

Due date: Tuesday, Jan 15

1. Problems in the text, pages 193-195: 2,3,4.
2. Find the inner products of discrete time phasors, assuming  $t$  ranges over all integers:
  - (a)  $\langle e^{i\pi/2t}, e^{i\pi/3t} \rangle$
  - (b)  $\langle e^{i\pi/6t}, e^{i\pi/6t} \rangle$
3. Compute the values of  $|U(\omega)|$  from equations (4.9) and (4.10) on page 181 for frequencies at the fractional points: 0.1, 0.2, 0.3, 0.4, and 0.5. Make a table of these values and their differences, in dB.