

# MAT 321 Homework 3

## Spring 2025

Due date: Monday, March 3

1. Problems in the text, page 216: 5,6,7,8. Note: There was a typo on problem 7 in some older editions of the text: It should read:

$$h_t = 0.42 - 0.5 \cos\left(\frac{2\pi t}{n-1}\right) + 0.08 \cos\left(\frac{4\pi t}{n-1}\right).$$

Also, on problem 8, for the triangle window, it is possible to do this problem by grouping the sum in various ways after factoring out a “middle term”, like we have done in other cases, or it can also be simplified with the finite sum of a geometric series. However, it is most simply derived with convolution. Take your best crack at it, and I will show you the convolution method in class.

2. Read the Core Audio email thread linked on the website. Make a critical analysis of each contribution, addressing each of the following questions:
  - What did the author say which is ambiguous. Can you clarify or suggest a clearer statement or question?
  - Did the author say anything that is technically incorrect? If so, what would be a correction?
  - Do you agree/disagree with the author, and if so why?
  - Was the author’s response helpful to the discussion? Indicate which was your favorite response to the initial question and say why.