

## Math 3607: Homework 10

Due: 11:59PM, Monday, April 12, 2021

**TOTAL: 20 points**

1. Calculate the third-order forward difference approximation to  $f'(x)$ , which can be written as

$$D_h^{[3f]}\{f\}(x) \approx c_1 f(x) + c_2 f(x+h) + c_3 f(x+2h) + c_4 f(x+3h).$$

You may use the approach shown in lecture or follow the directions found in Problem 14.1–5.

2. Do **LM** 14.1–12.
3. Do **LM** 14.1–17.
4. Do **LM** 14.2–3(b).
5. Do **LM** 14.2–6.
6. Do **LM** 14.2–11(a).