

MATH 321-01 (161)
HW # 1
Due on Sunday 2/10/2016

Q1. Problem 15 (b) textbook page 29

Q2. Let $f(x) = 2.753x^3 - 2.958x^2 + 3.169x - 4.675$

- (a) Write $f(x)$ in nested form.
- (b) How many **multiplications** are there in the usual form?
- (c) How many **multiplications** are there in the nested form?
- (d) Evaluate $f(x)$ at $x = 1.077$ using: exact arithmetic, 3-digit chopping, and 3-digit rounding
- (e) Determine the absolute error and the relative error for each evaluation.

Q3. Evaluate the following function at $x = \pi$ using 3 digit rounding arithmetic:

$$f(x) = \frac{x^2 + 10 \cos x}{4x}$$