

Math555 Homework 1

Note: You may turn in your homework through paper work (first three weeks only) or through CoCalc. To submit the k -th homework, simply put your files in the folder HW k on CoCalc, and it will be collected on the due day.

1. You should have received an invitation email from CoCalc. Do the following:
 - (a) Register an account with your **school email**. (Let me know if you prefer using a different email address.)
 - (b) Open the project whose name contains **2018FMath555**.
 - (c) Open HW1 > name.txt.
 - (d) Enter your name in name.txt and click on **Save**.

[This assignment can only be done electronically.]

2. Let $f(x) = (x)_3$. Expand $f(x)$ and write it in the form of

$$f(x) = ax^3 + bx^2 + cx + d.$$

Compute the value of $f(-2)$ and $f(3.5)$.

Solution. Expand $f(x)$ and obtain

$$\begin{aligned} f(x) &= (x)_3 \\ &= (x)(x-1)(x-2) \\ &= x^3 - 3x^2 + 2x. \end{aligned}$$

Therefore,

$$f(-2) = (-2)(-3)(-4) = -24$$

and

$$f(3.5) = (3.5)(2.5)(1.5) = 13.125.$$