

# History of Mathematics

Fifth Homework:

Due Monday 21 February 2022.

Math 629

15 February 2022

To hand in: We are using Gradescope for homework submission.

1. [10] Exercise 6.5.2 from Stillwell.
2. [15] Exercise 6.5.3 from Stillwell. Also find the other two solutions (this may require reading my notes on cubics.)
3. [15] Here is another cubic to solve completely:  $x^3 = 7x + 6$ .
4. [15] Here is another cubic to solve completely:  $x^3 + 2x + 4i = 0$ , where  $i = \sqrt{-1}$  is the imaginary unit, a square root of -1. You will find the example on the bottom of page 3 of my notes, as well as the formula  $(-i)^3 = i$  useful for this.
5. [25] Exercises 6.7.1, 6.7.2, and 6.7.3 in Stillwell. These should be relatively short.
6. [20] Cardano led an interesting life. Look up some material on the web (two sources besides our book) and write something about his life, both mathematical and otherwise. Probably two paragraphs, and try to include some story that is not in Stillwell's potted biography.