History of Mathematics Math 629

Seventh Homework: 27 February 2024
Due Monday 4 March 2024.

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

1. [10] Exercise 10.5.1 from Stillwell.

2. [10] Exercise 10.6.1 from Stillwell.

3. [10] Exercise 10.6.2 from Stillwell.

4. [10] Exercise 10.6.3 from Stillwell.

5. [10] Exercise 10.7.3 from Stillwell.

    For this, use the formula $\zeta(1 - s) = 2(2\pi)^{-s} \cos \frac{s\pi}{2} \, \Gamma(s) \, \zeta(s)$. You need to recognise the sum as $\zeta(1 - s)$ and then apply this formula. Note that for n a positive integer, $\Gamma(n) = (n - 1)!$.

6. [10] Write a coherent few sentences (maybe a paragraph) about at least one thing that is completely wrong with the Numberphile video. Be sure to be mathematically correct; you may need to recall your second semester of Calculus.