

MATHEMATICS 153, SPRING 2020, QUIZ 3

Directions: The answers to this quiz are to be submitted to the instructor of your discussion section by **11:59 P.M.** on **Tuesday, June 2.** Please include your name, student identification number, and discussion section number on the worked out quiz.

1. Use Bombelli's approach to find a complex number $c = a + bi$ such that $c^3 = 18 + 26i$ where a and b are positive integers (both are fairly small). Note that if p and q are integers such that $pq = 18$ or 26 then there are only a few possible choices for these integers.
2. Take the last four digits **ABCD** of your student identification number, and let $z_1 = A + Bi$ and $z_2 = C + Di$ be the corresponding complex numbers obtained as indicated. Find the complex number $z = p + qi$ such that

$$\frac{1}{z} = \frac{1}{z_1} + \frac{1}{z_2} .$$

In the second problem you should compute p and q explicitly to four significant digits. You may use a calculator or simple programmable device to work this quiz. Although you may consult with other students about this problem, the answers you submit must be your own work and no one else's.