

MATHEMATICS 153, SPRING 2020, QUIZ 1

Directions: The answers to this quiz are to be submitted to the instructor of your discussion section by noon Friday, April 24. Please include your name, student identification number, and discussion section number on the worked out quiz.

1. Suppose that d is the square of an odd integer (hence d^2 is also odd). Explain why there is a Pythagorean triple of the form $(k, d, k + 1)$ such that $k^2 + d^2 = (k + 1)^2$. [*Hint:* Expand the right hand side.]
2. Take the last four digits **ABCD** of your student identification number. If this number is odd let $d = \mathbf{ABCD}$, and if it is even let $d = \mathbf{1 + ABCD}$. Compute explicitly the unique Pythagorean triple $(k, d, k + 1)$ which exists by the first question.

You may use a calculator or simple programmable device to work the second part. Although you may consult with other students about this problem, the answers you submit must be your own work and no one else's.