

MATH 104A, FALL 2018

NUMBER THEORY, HW 1

Due Wednesday October 10th by 5PM in Shubham Sinha's box*

From Weissman's book *An illustrated theory of numbers*:

- Exercises (Section 0, pages 20–21):
7, 10, 11, 15, 22, 23, 28, 29, 30

Problem A. Fix two numbers $a, b \in \mathbb{Z}$. Show that the quadratic equation

$$x^2 + ax + b = 0$$

has integer solutions x if and only if the discriminant $a^2 - 4b$ is a perfect square.

*Located in the basement of APM – turn left as you exit the elevator at level B.