

NUMBER THEORY: CLASS 1

1. EXERCISE

- 1) Show $1 + 3 + 5 + \dots + (2n - 1) = n^2$.
- 2) Show that if n is odd then $n^2 + 1$ is even by using contrapositive.
- 3) Show that $\sqrt{5}$ is an irrational number.
- 4) Prove that if numbers $1, 2, \dots, 12$ are randomly positioned around a circle, then some set of three consecutively positioned numbers must have a sum of at least 19.