# In-Class Worksheet
### Discrete Math & Functional Programming— CSCI 054— Spring 2024
### Instructor: Osborn

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Claim: no positive integer is expressible in two different ways as the sum of two perfect squares

| write in decimal | write in binary |
|---|---|
| 1 | 3 |
| 10 | 8 |
| 100 | 10 |
| 1011 | 22 |
| 1100 | 37 |
| 10101 | 47 |

Claim: If a number is odd, then its binary representation ends with a 1.

Claim: Let $n$ be any integer. Then $n$ is even if and only if $n^2$ is even.