## In-Class Worksheet

## Discrete Math \& Functional Programming- CSCI 054- Spring 2024 <br> Instructor: Osborn

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 | 47 |
| 10101 |  |

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.

