MATH 201 SPRING 2024 GRADED HOMEWORK #1

Write clearly. Both questions carry equal weight.

For each proposition, write a formal proof.

(1) For integers m and n to have the same parity, it is sufficient for $m^2 + n^2$ to be a multiple of 4.

(2) Let n be an integer. Then $n^2 + n + 11$ is odd.