Pin: 300
Name: Prof. Girardi

Math 300   Due Date: Sun. 11/15 at 2:00pm. HW set: 11

▶ Note due at 2pm.

▶ Recall, when asked to *symbolically write* a statement, do so **using quanifiers**.

▶ Unless otherwise stated, in a proof you may use any previous result (or Exercise) provided you reference the result.

▶ If you need, look at the LaTeX here to remind yourself how to Latex:

   $n|a$ (i.e., n divides a), $n \nmid a$ (i.e., n does not divide a), and $a \equiv b \pmod{n}$ (i.e., a is congruent to b modulo n).

$$\boxed{\text{Exercises}}$$

Exercise 1. Over §3.5.

Conjecture 1. If a and b are integers, then $(a + b)^2 \equiv (a^2 + b^2) \pmod 2$.

ER 1i. Sybolically write Conjecture 1. Be sure to use quantifiers.

ER 1ii. Determine if Conjecture 1 is true or false. If Conjecture 1 is true, then write a formal proof of Conjecture 1. If Conjecture 1 is false, then provide a counterexample that shows (and clearly explains) why Conjecture 1 if false.