Reading. Section 1.5-1.7 from *Calculus: One and Several Variables*.

Recall from week 1 where we introduced *if-then* statements and *iff* statements. Here we will give a more rigorous definition of *if-then* statements, and use the definition to discuss and edge case of the *if-then* statement where the conditional is always false.

Definition 2.1. Statement *If A then B* is equivalent to *Not(A and Not(B))*.

Theorem 2.2. *If it is raining, then the ground is wet.*

Problem 2.3. Write 2.2 in its equivalent form, using everyday language.
Hint: Not() can be written as 'It can't be the case that...'

Theorem 2.4. *If 1+1=3, then triangles have 4 sides.*

Problem 2.5. Denote A as *1+1=3*, and B as *triangles have 4 sides*.

1. Write *Not(B)*. Is it true?
2. Write *A and Not(B)*. Is it true?
3. Write 2.4 using without using the *if-then* format. Is it true?