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- Recall Symbolically Write Guidelines, which is posted homework page and handout page for your convenience. Note item 4 states: within an open sentence, you can use English words that are not logical connectives word (e.g. x is irrational).
- Recall, the symbol for the rational numbers is \mathbb{Q} while the symbol for the irrational numbers is $\mathbb{R} \setminus \mathbb{Q}$.
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Exercise. A variant of Exercise 3.3.6c.

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Conjecture 1. For every pair of real numbers x and y , if $x + y$ is irrational, then x is irrational and y is irrational.

i. Symbolically write Conjecture 1.

cut this out and put your solution here

ii. 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 is false.