

Problem 1. How long did you spend on this homework assignment?

- A) < 1 hour
- B) Between 1 and 2 hours
- C) Between 2 and 3 hours
- D) Between 3 and 4 hours
- E) > 4 hours

Answer ‘E’ on any of the following questions for “I don’t know”.

Problem 2. Every integer ≥ 4 is the sum of two primes.

- A) True
- B) False

Solution. B); I intended to ask about every *even* integer, not *every* integer. For even integers, the answer is unknown; for odd integers it is false. There will be a discussion about this in class on Friday. □

Problem 3. It is okay to skip steps in a proof if they could be filled in easily by anyone you expect to read the proof (including yourself).

- A) True
- B) False

Solution. A) □

Problem 4. Consider the statement “For any integer x there is a larger integer y .” Is the following a valid proof? “Let $x = 6$. Then $7 > x$ so we may take $y = 7$.”

- A) True
- B) False

Solution. B) □

Problem 5. It is possible to prove the statement “ X if and only if Y ” by proving both “ X implies Y ” and “not X implies not Y ”.

- A) True
- B) False

Solution. A) □

Problem 6. The proof of an “if-then” statement should begin by unwinding the definitions to their most basic parts.

- A) True
- B) False

Solution. B) □