

Mathematical Logic — Assignment Four

February 1st, 2017

1. Show that there is a non-standard model of Peano arithmetic.
2. Write the statement of one *natural* incompleteness result.
3. Discuss whether a theory of real numbers allows to prove any true first-order sentence on \mathbb{R} , the set of real numbers.

Each question is worth 12 points. The points in all the four assignments will be added together and the result will be divided by 4, and this will be the final result. Remember to mark your answer sheet with your name.