MAU11602 Assignment 6, Due Wednesday 20 March 2024

1. (a) The set of natural numbers is, trivially, a subset of the set of natural numbers. Is it an arithmetic subset?

   (b) Is the union of any two arithmetic subsets of the natural numbers an arithmetic subset?

   (c) Is the intersection of any two arithmetic subsets of the natural numbers an arithmetic subset?

   (d) Is every subset of an arithmetic subset arithmetic?

   Note: You shouldn't need any set theory for this beyond the basic definitions. In any cases where your answer is "yes" give an informal proof. In any cases where your answer is "no" give a counterexample.