1998 Paper 1 Question 2

Discrete Mathematics

What is a relation on a set? [1 mark]

What is an equivalence relation on a set? [3 marks]

Prove that an equivalence relation partitions a set into disjoint equivalence classes. [4 marks]

Given $n \in \mathbb{Z}$ define a relation R on $\mathbb{N}$ by $aRb \iff b - a = n$. For what values of n is R an equivalence relation? What are the equivalence classes? [2 marks]