Introductory Mathematics

Giorgio Grigolo

December 2, 2021

Contents

Lecture 1: Integers

Definition. $a|b \Leftrightarrow \exists n \in \mathbb{Z} : b = an$

Definition. $a \nmid b \Leftrightarrow \gcd(a, b) = 1$

Proposition. $a|b \wedge a|c \Leftrightarrow a|(mb + nc) \Rightarrow a|(b - c)$

Theorem. Let S be a set and bounded below. $S \neq \varnothing \wedge S \subseteq \mathbb{Z} \Rightarrow S$ has a least element.

Lecture 2: Riemannian Manifolds