

Answer on Question #51158 – Math – Discrete Mathematics

Question

Who has developed the concept of congruences and when he developed the concept?

Solution

The foundations of modular arithmetic were introduced in the third century BCE, by Euclid, in the 7th book of his *Elements*. The modern approach to a congruence relation on the integers was developed by Carl Friedrich Gauss in his book *Disquisitiones Arithmeticae*, published in 1801.

The fifth paper in series “*Grundlagen einer allgemeinen Mannigfaltigkeitslehre*” (“*Foundations of a General Theory of Aggregates*”) by Georg Cantor, published in 1883, begins by defining well-ordered sets. Ordinal numbers are then introduced as the order types of well-ordered sets. Cantor then defines the addition and multiplication of the cardinal and ordinal numbers.

Answer: Carl Friedrich Gauss, 1801.