Mathematical definitions for everyone

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1 Set

Set In mathematics, a set is a collection of well defined distinct objects, considered as an object in its own right.

2 Function

(MSC: 03E99)

Function . Is a relation between sets in which one element of the set is related to another element of the second set.

$$f : A \mapsto B$$

Functions are composed by three things:

- The domain.
- The codomain or range.
- The correspondence rule.

$$f(n) :=$$

Domain

Codomain or Range

Theorem 2.1 (Taylor Polinomial). *Given some function f with derivatives of order n on the point $x = 0$. Exists a only one polynomial P on degree less or equal of n which satisfies the $n + 1$ conditions:*

$$P(0) = f(0), P'(0) = f'(0), \ldots, P^n = f^{(n)}(0)$$

, and given by the formula:

$$P(x) = \sum_{k=0}^{n} \frac{f^{(k)}(0)}{x!} x^k$$

where $x \neq x_0$.