Analysis Module: AsymptoticEquivalent

Mathlib4 Documentation

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1 Module Overview

1.1

In this file, we define the relation , which means that is little o of along the filter .

Unlike relations, this one requires and to have the same codomain . While the definition only requires to be a , most interesting properties require it to be a .

1.2

We introduce the notation , which you can use by opening the locale.

1.3

If is a :

- is an equivalence relation - Equivalent statements for : - If , this is true iff (see) - For , this is true iff (see)

If is a :

- Alternative characterization of the relation (see) :

- Provided some non-vanishing hypothesis, this can be seen as (see) - For any constant , implies (see) - and are compatible with (see and)

If is a :

- If , we have (see)

1.4

Note that takes the parameters in that order. This is to enable , as requires that the last two explicit arguments are .

2 Key Definitions

Definition 1 (IsEquivalent). A def defining `IsEquivalent`

Definition 2 (IsEquivalent). A theorem defining `IsEquivalent`

Definition 3 (IsEquivalent). A theorem defining `IsEquivalent`

Definition 4 (IsEquivalent). A theorem defining `IsEquivalent`

Definition 5 (IsEquivalent). A theorem defining `IsEquivalent`

Definition 6 (IsEquivalent). A theorem defining `IsEquivalent`

Definition 7 (IsEquivalent). A theorem defining `IsEquivalent`

Definition 8 (IsEquivalent). A theorem defining `IsEquivalent`

Definition 9 (IsEquivalent). A theorem defining `IsEquivalent`

Definition 10 (IsEquivalent). A theorem defining `IsEquivalent`