# Érdekességek

## Bizonyítás

```
calculus =
 {ForAll[f, integral[derivative[f]] == f], ForAll[f, derivative[integral[f]] == f],
  ForAll[{f, g}, derivative[product[f, g]] ==
    sum[product[f, derivative[g]], product[g, derivative[f]]]],
  ForAll[{f, g}, derivative[sum[f, g]] == sum[derivative[f], derivative[g]]]}
```

```
proof = FindEquationalProof[ForAll[{f, g},
   sum[integral[product[f, derivative[g]]],
     integral[product[g, derivative[f]]]] == product[f, g]],
  calculus]
```

Out[•]= ProofObject[ Logic: EquationalLogic Steps: 11
Theorem: $\forall_{\{f,g\}}$ sum[integral[product[f, ≪1≫]], ≪1≫] == ≪1≫ ]

In[•]:=
```
proof["ProofNotebook"]
```

### Axiom 1

We are given that:

`x1==derivative[integral[x1]]`

### Axiom 2

We are given that:

`x1==integral[derivative[x1]]`

### Axiom 3

We are given that:

`derivative[sum[x1,x2]]==sum[derivative[x1],derivative[x2]]`

### Axiom 4

We are given that:

`derivative[product[x1,x2]]==sum[product[x1,derivative[x2]],product[x2,derivative[x1]]`

### Hypothesis 1

We would like to show that:

`sum[integral[product[f,derivative[g]]],integral[product[g,derivative[f]]]]==product[f`

### Critical Pair Lemma 1

The following expressions are equivalent:

`derivative[sum[integral[x1],x2]]==sum[x1,derivative[x2]]`

### Proof

Note that the input for the rule:

Out[ ]=

`sum[derivative[x1_],derivative[x2_]]→derivative[sum[x1,x2]]`

contains a subpattern of the form:

`derivative[x1_]`

which can be unified with the input for the rule:

`derivative[integral[x1_]]→x1`

where these rules follow from Axiom 3 and Axiom 1 respectively.

## Critical Pair Lemma 2

The following expressions are equivalent:

`sum[integral[x1],x2]==integral[sum[x1,derivative[x2]]]`

### Proof

Note that the input for the rule:

`integral[derivative[x1_]]→x1`

contains a subpattern of the form:

`derivative[x1_]`

which can be unified with the input for the rule:

`derivative[sum[integral[x1_],x2_]]→sum[x1,derivative[x2]]`

where these rules follow from Axiom 2 and Critical Pair Lemma 1 respectively.

## Critical Pair Lemma 3

The following expressions are equivalent:

`sum[integral[x1],integral[x2]]==integral[sum[x1,x2]]`

### Proof

Note that the input for the rule:

`integral[sum[x1_,derivative[x2_]]]→sum[integral[x1],x2]`

contains a subpattern of the form:

`derivative[x2_]`

which can be unified with the input for the rule:

`derivative[integral[x1_]]→x1`

where these rules follow from Critical Pair Lemma 2 and Axiom 1 respectively.

## Substitution Lemma 1

It can be shown that:

`integral[sum[product[f,derivative[g]],product[g,derivative[f]]]]==product[f,g]`

### Proof

We start by taking Hypothesis 1, and apply the substitution:

`sum[integral[x1_],integral[x2_]]→integral[sum[x1,x2]]`

which follows from Critical Pair Lemma 3.

## Substitution Lemma 2

It can be shown that:

`integral[derivative[product[f,g]]]==product[f,g]`

### Proof

We start by taking Substitution Lemma 1, and apply the substitution:

`sum[product[x1_,derivative[x2_]],product[x2_,derivative[x1_]]]→derivative[product[x1`

which follows from Axiom 4.

### Conclusion 1

We obtain the conclusion:

`True`

### Proof

Take Substitution Lemma 2, and apply the substitution:

`integral[derivative[x1_]]→x1`

which follows from Axiom 2.

# Fordítás

```
In[•]:= TextTranslation["Where is the library?", #] & /@ {"Russian", "German", "Spanish"}
Out[•]= {Где находится библиотека?,
 Wo befindet sich die Bibliothek?, ¿Donde está la biblioteca?}

Export["transl.tex", %, "TeX"]
Out[•]= transl.tex
```

# Értő olvasás

```
context = "The population of Paris in its
     administrative city limits was 2,241,346 in January 2014.
Paris is the capital and most populous city of France, with
     a 2015 population of 2,229,621.
By the 17th century, Paris had become one of Europe's major centres of
finance, commerce, fashion, science,
     and the arts, a position that it retains still today";
questions = {"What is Paris?",
    "When did Paris have a population of 2.24 million?",
    "Why is Paris famous in Europe?"};

res =
 Thread[questions -> FindTextualAnswer[context, questions, 1, "HighlightedSentence"]]
 // TableForm

"What is Paris?" →
 {"Paris is " the capital and most populous city of France ", }
  with a 2015 population of 2,229,621."
"When did Paris have a population of 2.24 million?" →
 {"The population of Paris in its administrative city limits was 2,241,346 in " January
"Why is Paris famous in Europe?" →
 {"By the 17th century, Paris had become one of Europe's                    }
  " major centres of finance, commerce, fashion, science, and the arts ",
  a position that it retains still today"
```