TUTORIAL MENJALANKAN INTEGRAL

16520373/Farrel Ahmad

Program ini menggunakan integral tentu dengan jumlah Riemann trapesium. Program ini menggunakan input fungsi polinomial dan derajatnya pada pembilang dan penyebut.

Contoh program:

1. Numerator degree = 3
   Denominator degree = 0
   Lower bound = 2
   Upper bound = 3

$$\int_2^3 3x^3 - 5x + 2 \, dx$$

Equivalen dengan

$$\int_2^3 \frac{3x^3 + 0x^2 - 5x^1 + 2x^0}{1x^0} dx$$

Sehingga inputnya adalah seperti ini

```
Welcome to Calculator++
Insert
'c' for basic caclulator
'i' for integral calculator
'e' for exit
Insert Command: i

You are about to define a function
Please define a numerator
Insert numerator degree: 3
Insert coefficient of x^3: 3
Insert coefficient of x^2: 0
Insert coefficient of x^1: -5
Insert coefficient of x^0: 2

Please define a denominator
Insert denominator degree: 0
Insert coefficient of x^0: 1

Insert lower bound: 2
Insert upper bound: 3

Result = 38.25
```

2. Numerator degree = 0
   Denominator degree = 3
   Lower bound = 1
   Upper bound = 3

$$\int_1^3 \frac{1}{x^3 + 5x^2} dx$$

   Ekuivalen dengan

$$\int_1^3 \frac{1x^0}{1x^3 + 5x^2 + 0x^1 + 0x^0} dx$$

Inputnya adalah seperti ini

```
Welcome to Calculator++
Insert
'c' for basic caclulator
'i' for integral calculator
'e' for exit
Insert Command: i

You are about to define a function
Please define a numerator
Insert numerator degree: 0
Insert coefficient of x^0: 1

Please define a denominator
Insert denominator degree: 3
Insert coefficient of x^3: 1
Insert coefficient of x^2: 5
Insert coefficient of x^1: 0
Insert coefficient of x^0: 0

Insert lower bound: 1
Insert upper bound: 3

Result = 0.100896
```

3. Numerator degree = 2
Denominator degree = 4
Lower bound = -3
Upper bound = 5

$$\int_{-3}^{5} \frac{x^2}{x^4 + 5x^2} dx$$

Ekuivalen dengan

$$\int_{-3}^{5} \frac{1x^2 + 0x^1 + 0x^0}{1x^4 + 0x^3 + 5x^2 + 0x^1 + 0x^0} dx$$

Inputnya adalah seperti ini

```
Welcome to Calculator++
Insert
'c' for basic caclulator
'i' for integral calculator
'e' for exit
Insert Command: i

You are about to define a function
Please define a numerator
Insert numerator degree: 2
Insert coefficient of x^2: 1
Insert coefficient of x^1: 0
Insert coefficient of x^0: 0

Please define a denominator
Insert denominator degree: 4
Insert coefficient of x^4: 1
Insert coefficient of x^3: 0
Insert coefficient of x^2: 5
Insert coefficient of x^1: 0
Insert coefficient of x^0: 0

Insert lower bound: -3
Insert upper bound: 5

Result = 0.930444
```