

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 serta input jumlah partisi integral Riemann.

Contoh program:

1. Numerator degree = 3
Denominator degree = 0
Lower bound = 2
Upper bound = 3
Jumlah partisi = 20

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

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

Insert amount of partition: 20

Result = 38.2594
```

2. Numerator degree = 0
Denominator degree = 3
Lower bound = 1
Upper bound = 3
Jumlah partisi = 38

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

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

Insert amount of partition: 38

Result = 0.100977
```

3. Numerator degree = 2
Denominator degree = 4
Lower bound = -3
Upper bound = 5
Jumlah partisi = 999

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

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

Insert amount of partition: 999

Result = 0.930444
```