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## Interpolation Polynomial with Javascript

Contoh Input/Output

Format input:

```
n
x1 y1
x2 y2
...
xn yn
xn+1 yn+1
```

Format output:

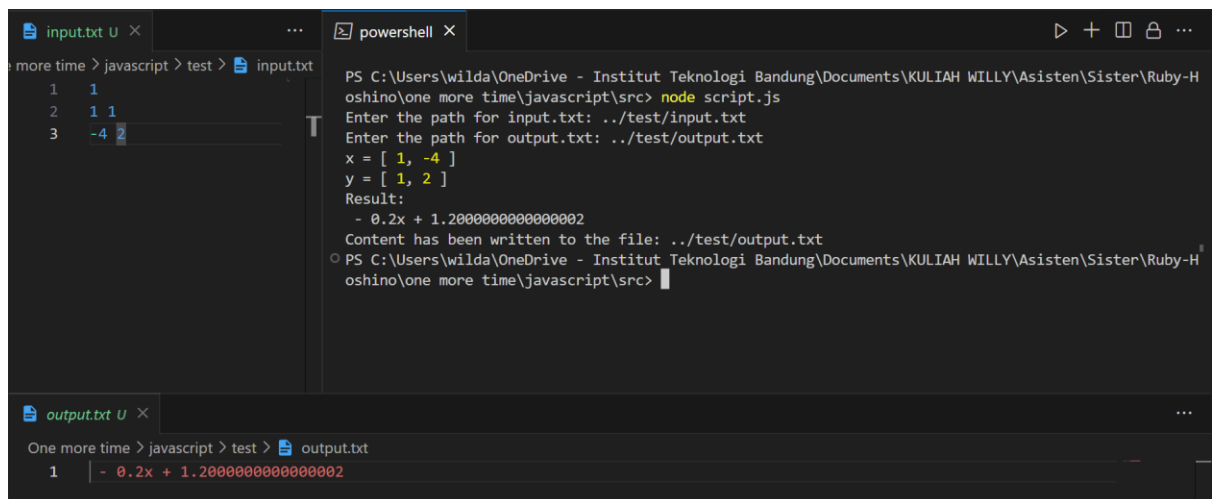
```
ax^n + bx^{n-1} + ... + px + q
```

yang berarti  $y = ax^n + bx^{n-1} + \dots + px + q$

dengan ^ merupakan pangkat yang berarti  $ax^{**n} = ax^n$

Jumlah titik =  $N + 1$

### 1. $N = 1$

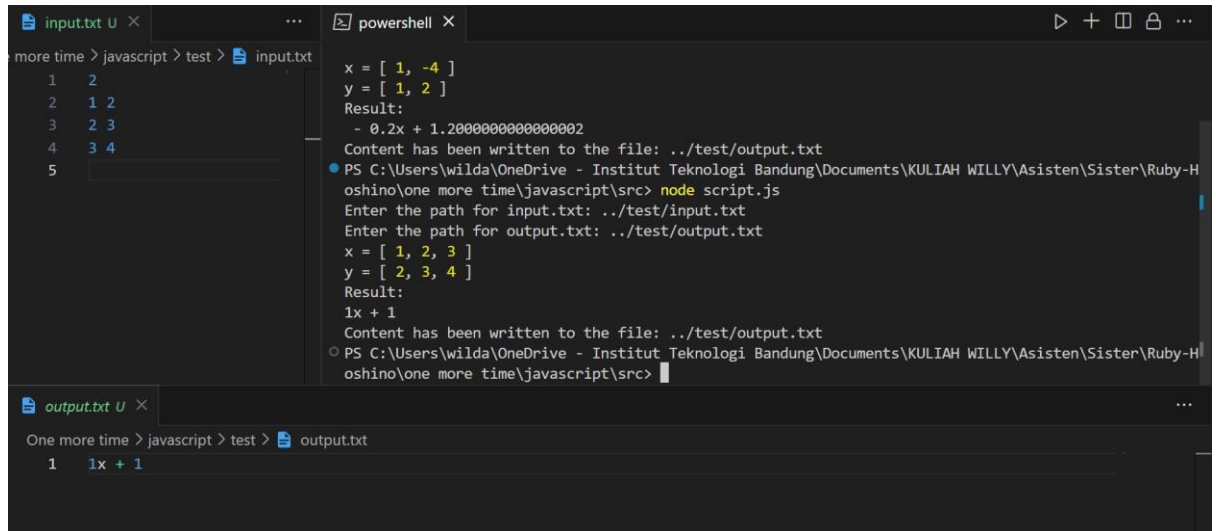


```
input.txt U ×
more time > javascript > test > input.txt
1 1
2 1 1
3 -4 2

powershell ×
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\one more time\javascript\src> node script.js
Enter the path for input.txt: ../test/input.txt
Enter the path for output.txt: ../test/output.txt
x = [ 1, -4 ]
y = [ 1, 2 ]
Result:
- 0.2x + 1.2000000000000002
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\one more time\javascript\src>

output.txt U ×
One more time > javascript > test > output.txt
1 - 0.2x + 1.2000000000000002
```

## 2. $N = 2$

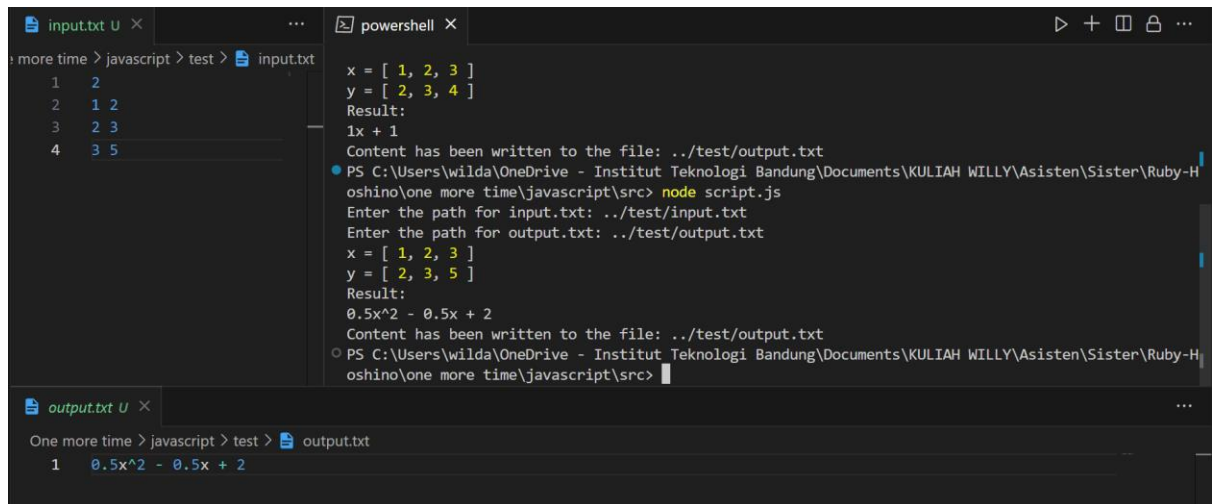


```
input.txt U X ... powershell X
more time > javascript > test > input.txt
1 2
2 1 2
3 2 3
4 3 4
5

x = [ 1, -4 ]
y = [ 1, 2 ]
Result:
- 0.2x + 1.2000000000000002
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\one more time\javascript\src> node script.js
Enter the path for input.txt: ../test/input.txt
Enter the path for output.txt: ../test/output.txt
x = [ 1, 2, 3 ]
y = [ 2, 3, 4 ]
Result:
1x + 1
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\one more time\javascript\src>

output.txt U X ...
One more time > javascript > test > output.txt
1 1x + 1
```

## 3. $N = 2$

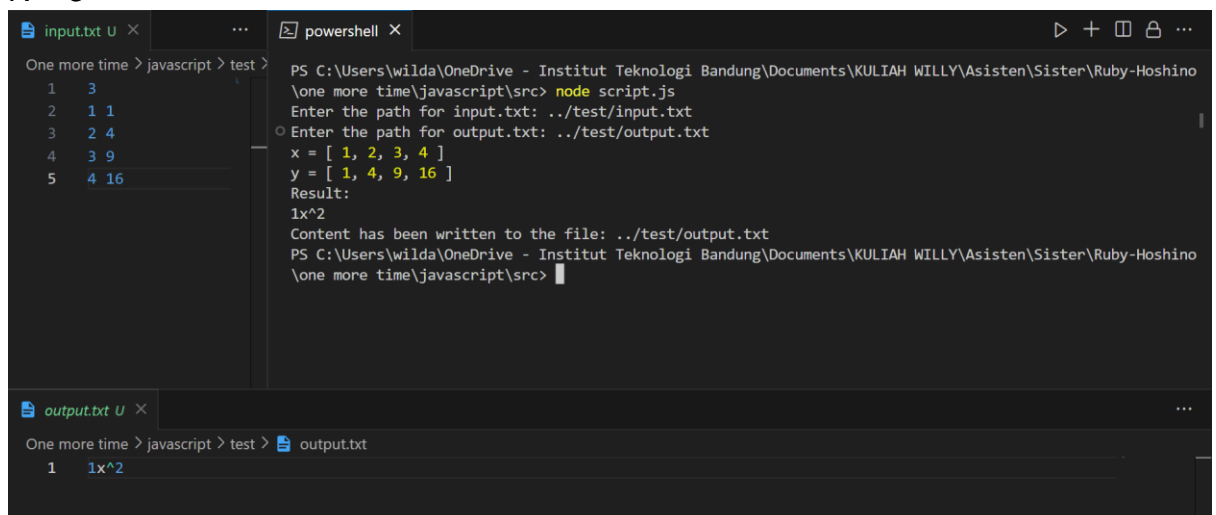


```
input.txt U X ... powershell X
more time > javascript > test > input.txt
1 2
2 1 2
3 2 3
4 3 5

x = [ 1, 2, 3 ]
y = [ 2, 3, 4 ]
Result:
1x + 1
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\one more time\javascript\src> node script.js
Enter the path for input.txt: ../test/input.txt
Enter the path for output.txt: ../test/output.txt
x = [ 1, 2, 3 ]
y = [ 2, 3, 5 ]
Result:
0.5x^2 - 0.5x + 2
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\one more time\javascript\src>

output.txt U X ...
One more time > javascript > test > output.txt
1 0.5x^2 - 0.5x + 2
```

## 4. $N = 3$



```
input.txt U X ... powershell X
One more time > javascript > test >
1 3
2 1 1
3 2 4
4 3 9
5 4 16

PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\one more time\javascript\src> node script.js
Enter the path for input.txt: ../test/input.txt
Enter the path for output.txt: ../test/output.txt
x = [ 1, 2, 3, 4 ]
y = [ 1, 4, 9, 16 ]
Result:
1x^2
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\one more time\javascript\src>

output.txt U X ...
One more time > javascript > test > output.txt
1 1x^2
```

## 5. $N = 3$

```

input.txt U × ... powershell ×
One more time > javascript > test > input
1 3
2 1 2
3 2 3
4 3 4
5 4 5

y = [ 1, 4, 9, 16 ]
Result:
1x^2
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript> node script.js
Enter the path for input.txt: ../test/input.txt
Enter the path for output.txt: ../test/output.txt
x = [ 1, 2, 3, 4 ]
y = [ 2, 3, 4, 5 ]
Result:
1.000000000000018x + 1
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript> src>

output.txt U ×
One more time > javascript > test > output.txt
1 1.000000000000018x + 1

```

## 6. $N = 3$

```

input.txt U × ... powershell ×
One more time > javascript > test > input
1 3
2 1 10
3 2 2
4 3 5
5 4 1

y = [ 2, 3, 4, 5 ]
Result:
1.000000000000018x + 1
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript> src> node script.js
Enter the path for input.txt: ../test/input.txt
Enter the path for output.txt: ../test/output.txt
x = [ 1, 2, 3, 4 ]
y = [ 10, 2, 5, 1 ]
Result:
- 3x^3 + 23.5x^2 - 57.49999999999999x + 47
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript> src>

output.txt U ×
One more time > javascript > test > output.txt
1 - 3x^3 + 23.5x^2 - 57.49999999999999x + 47

```

## 7. $N = 4$

```

input.txt U × ... powershell ×
One more time > javascript > test > input
1 4
2 0 1
3 1 1
4 2 1
5 3 1
6 4 1
7

y = [ 10, 2, 5, 1 ]
Result:
- 3x^3 + 23.5x^2 - 57.49999999999999x + 47
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript> src> node script.js
Enter the path for input.txt: ../test/input.txt
Enter the path for output.txt: ../test/output.txt
x = [ 0, 1, 2, 3, 4 ]
y = [ 1, 1, 1, 1, 1 ]
Result:
1
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript> src>

output.txt U ×
One more time > javascript > test > output.txt
1 1

```

## 8. N = 4

```

input.txt U × ... node ×
One more time > javascript > test > input
1 4
2 0 0
3 1 0
4 2 0
5 3 0
6 4 1

y = [ 1, 1, 1, 1, 1 ]
Result:
1
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript\src> node script.js
Enter the path for input.txt: ../test/input.txt
Enter the path for output.txt: ../test/output.txt
x = [ 0, 1, 2, 3, 4 ]
y = [ 0, 0, 0, 0, 1 ]
Result:
0.041666666666666664x^4 - 0.25x^3 + 0.4583333333333333x^2 - 0.25x
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript\src>

output.txt U ×
One more time > javascript > test > output.txt
1 0.041666666666666664x^4 - 0.25x^3 + 0.4583333333333333x^2 - 0.25x

```

## 9. N = 7

```

input.txt U × ... powershell ×
One more time > javascript > test > input
1 7
2 0 0
3 1 0
4 2 0
5 3 0
6 4 1
7 5 1
8 6 1
9 7 1

Enter the path for output.txt: ../test/output.txt
x = [
0, 1, 2, 3,
4, 5, 6, 7
]
y = [
0, 0, 0, 0,
1, 1, 1, 1
]
Result:
- 0.003968253968253967x^7 + 0.0972222222222222x^6 - 0.9361111111111107x^5 + 4.472222222222222x^4
- 10.986111111111111x^3 + 12.930555555555555x^2 - 5.573809523809522x
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript\src>

output.txt U ×
One more time > javascript > test > output.txt
1 - 0.003968253968253967x^7 + 0.0972222222222222x^6 - 0.9361111111111107x^5 + 4.472222222222222x^4 - 10.9861111111

```

## 10. N = 10

```

input.txt U × ... powershell ×
One more time > javascript > test > input
1 10
2 1 10
3 2 2
4 3 5
5 4 1
6 6 1
7 -10 -10
8 0 0
9 18 100
10 -100 100
11 200 10
12 150 -150

6, -10, 0, 18,
-100, 200, 150
]
y = [
10, 2, 5, 1,
1, -10, 0, 100,
100, 10, -150
]
Result:
- 8.215763230093799e-10x^10 + 2.2364932807996072e-7x^9 - 4.596584541594323e-7x^8 - 0.002556589534
1109024x^7 + 0.05517289041481031x^6 - 0.005976425398491499x^5 - 4.590928475760433x^4 + 28.33206329
1449046x^3 - 63.31933685938633x^2 + 49.53156240504624x
Content has been written to the file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby
-Hoshino\one more time\javascript\src>

output.txt U ×
One more time > javascript > test > output.txt
1 - 8.215763230093799e-10x^10 + 2.2364932807996072e-7x^9 - 4.596584541594323e-7x^8 - 0.0025565895341109024x^7 + 0.

```