

Musicalgorithms: Testing

Most of the testing for Musicalgorithms 3.0 was done by comparing the output with the output of version 2.0 to ensure that the proper values were being generated. Wolfram Alpha was also used to compare the generated values of our algorithms to insure correctness since we doubled the allowable maximum range from 1000 note counts to 2000.

The screenshot shows the Wolfram Alpha website in a web browser. The search bar contains the text "e constant". Below the search bar, the results are displayed. The first result is "Assuming 'e' is a mathematical constant | Use the input as a person instead". Below this, the input is shown as "e". The decimal approximation is displayed as a long string of digits: 2.718281828459045235360287471352662497757247093699959574966967627724076... 63035354759457138217852516642742746639193200305992181741359662904357... 29003342952605956307381323286279434907632338298807531952510190115738... 34187930702154089149934884167509244761460668082264800168477411853742... 3454424371075390774499206955170276183860626133138458300075204493382... 65602976067371132007093287091274437470472306969772093101416928368190... 25515108657463772111252389784425056953696770785449969967946864454905... 98793163... There are buttons for "Fewer digits" and "More digits". Below the decimal approximation, the property is listed: "e is a transcendental number". A number line is shown with a point at approximately 2.718. Below the number line, the continued fraction is displayed: [2; 1, 2, 1, 1, 4, 1, 1, 6, 1, 1, 8, 1, 1, 10, 1, 1, 12, 1, 1, 14, 1, 1, 16, 1, 1, 1, ...]. There are buttons for "More terms" and "Fraction form". Below the continued fraction, the alternative representation is shown: $e = e^z$ for $z = 1$. There is a button for "More information". On the right side of the page, there is a sidebar with a "New to Wolfram|Alpha?" section and a "Take the Tour >>" button. At the bottom of the sidebar, there is a "Take Wolfram|Alpha anywhere..." section with icons for mobile devices and a "PRO" button.

Voice 1

Input Set:
E Constant

Note Count:
24

Use custom input:
☐ Input:
2,7,1,8,2,8,1,8,2,8,4,5,9,0,4,5,2,3,5,3,6,0,2,8

Voice 2

Input Set:
Phi

Note Count:
24

Use custom input:
☐ Input:
1,6,1,8,0,3,3,9,8,8,7,4,9,8,9,4,8,4,8,2,0,4,5,8

WelcomePitch InputDuration InputPitch MappingDuration MappingScale OptionsPlay

Voice 1

Input Set: E constant

Note Count: 24

☐ Use Custom Input

Input/Output:
2, 7, 1, 8, 2, 8, 1, 8, 2, 8, 4, 5, 9, 0, 4, 5, 2, 3, 5, 3, 6, 0, 2, 8

Generate Output

<-Welcome
Previous

Voice 2

Input Set: Phi

Note Count: 24

☐ Use Custom Input

Input/Output:
1, 6, 1, 8, 0, 3, 3, 9, 8, 8, 7, 4, 9, 8, 9, 4, 8, 4, 8, 2, 0, 4, 5, 8

Generate Output

Duration Input->
Next

Voice 1

Compress using:

Division

Range:

1

to:

88

Output:

20,69,11,78,20,78,11,78,20,78,40,49,88,1,40,49,20,30,49,30,59,1,20,78

Voice 2

Compress using:

Logarithmic

Range:

1

to:

88

Output:

27,75,27,84,1,53,53,88,84,84,80,62,88,84,88,62,84,62,84,43,1,62,69,84

Welcome

Pitch Input

Duration Input

Pitch Mapping

Duration Mapping

Scale Options

Play

Voice 1

Compress by:

Division

Range: 1 to 88

Output

20, 69, 11, 78, 20, 78, 11, 78, 20, 78, 40, 49, 88, 1, 40, 49, 20, 30, 49, 30, 59, 1, 20, 78

Generate Output

Modifications

Replace all:

With:

☐ Add Silence

Value of Silence:

Modify

<-Duration Input

Previous

Voice 2

Compress by:

Logarithmic

Range: 1 to 88

Output

27, 75, 27, 84, 1, 53, 53, 88, 84, 84, 80, 62, 88, 84, 88, 62, 84, 62, 84, 43, 1, 62, 69, 84

Generate Output

Modifications

Replace all:

With:

☐ Add Silence

Value of Silence:

Modify

Duration Mapping->

Next