Exponents & the logarithm function

V 1.2

define

Informally, At each point on the curve

Where G = 2.3027

Define

as

forinteger x,

(x times)

For log to other bases adjust G.

Function logx(x As Double)

Dim iAs Double

Dim total As Double

total = 0

For i = 1 To x Step 0.001

total = total + 1 / i

Next

logx = (total / 1000) / 2.3026)

End Function

y = ax

Valid for a=1 upwards, x=0 upwards

' short version

' For i = 1 To x Step 0.0001

' total = total + 1 / i

' Next

'

' logx = ((total / 1000) / 2.3026)

Functionlogx(x As Double)

Dim iAs Double

Dim total As Double

i = 1

While (i \* 10) <= x

i = i \* 10

total = total + (100 \* 2.3026)

Wend

While i<= x

total = total + 1 / i

i = i + 0.01

Wend

logx = ((total / 100) / 2.3026)

End Function

Function loga(a As Double, x As Double)

loga = logx(x) / logx(a)

End Function

Function expx(x As Double)

Dim iAs Double

Dim total As Double

i = 1

'While total <= x

' i = i \* 10

' total = total + (100 \* 2.3026)

'Wend

While ((total / 1000) / 2.3026) <= x

total = total + 1 / i

i = i + 0.001

Wend

expx = i

End Function

Function expax(a As Double, x As Double)

Dim iAs Double

Dim a1 As Double

Dim total As Double

For i = 1 To a Step 0.0001

a1 = a1 + 1 / i

Next

a1 = a1 / 10000

i = 1

While ((total / 1000) / a1) <= x

total = total + 1 / i

i = i + 0.001

Wend

expax = i

End Function

**Notes**

Exponents

103 = 10x10x10 = 1,000

106 = 10x10x10x10x10x10 = 1,000,000

42 = 4x4 = 16

A logarithm is the reverse of the exponentiation function

Log(1000) = 3 reverse of 103 = 1000

Log(1000000) = 6 reverse of 106 = 1000000

1og(1023) = 3.01

For base 10, approximately the number of zeros (or total digits) in the number