
Subject: Re: how to create a LOG array from A to B
Posted by [Michael Galloy](#) on Thu, 12 Jan 2012 19:52:13 GMT
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On 1/12/12 12:27 PM, nata wrote:

> Hello guys,
>
> If I want to create an array of N positions from A to B I can do it
> like this :
> $\text{result} = \text{FINDGEN}(N) * (B - A) / (N - 1) + A$
>
> Right now I would like to create the same array but with a logarithmic
> "distribution" and for any positive A and B.
> For example, for A = 0, B = 1 and N=10 the result should be
> $\text{ALOG10}(1 + \text{FINDGEN}(10))$
>
> This is easy if A and B are powers of 10 but I don't know how to solve
> this problem with any other numbers.
> Thank you in advance for your help,
>
> nata

Just use your result at the top, but use $10.^a$ and $10.^b$ instead of a and b:

```
IDL> plot, alog10(findgen(n) * (10.^b - 10.^a) / (n - 1.) + 10.^a)
```

Mike

--

Michael Galloy

www.michaelgalloy.com

Modern IDL, A Guide to Learning IDL: <http://modernidl.idldev.com>

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Subject: Re: how to create a LOG array from A to B
Posted by [natha](#) on Thu, 12 Jan 2012 20:05:46 GMT
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Thank you Michael ! :D

nata

Subject: Re: how to create a LOG array from A to B
Posted by [natha](#) on Thu, 12 Jan 2012 21:41:24 GMT
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Michael,

Your code works but this is not exactly what I need.

Using your method I get something like this :

```
a=1.5
b=5.45
N=20
elev=ALOG10(FINDGEN(N) * (10.^b - 10.^a) / (N - 1.) + 10.^a)
PLOT, elev, REPLICATE(1,N), YR=[0,2], XR=[a,b], /XLOG, /XS, /YS,
PSYM=7
```

And I would like to have all the points equal-spaced on the plot. Do you think this is possible ?

Thank you for your help,

nata

Subject: Re: how to create a LOG array from A to B
Posted by [natha](#) on Thu, 12 Jan 2012 21:43:52 GMT

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I got it !

```
a=1.5
b=5.45
N=20

elev=FINDGEN(N)*(ALOG10(b)-ALOG10(a))/(N-1)+ALOG10(a)
elev=10.^elev

PLOT, elev, REPLICATE(1,N), YR=[0,2], XR=[a,b], /XLOG, /XS, /YS,
PSYM=7
```

nata

Subject: Re: how to create a LOG array from A to B
Posted by manodeep@gmail.com on Thu, 12 Jan 2012 21:50:00 GMT

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On Jan 12, 3:41 pm, nata <bernat.puigdomen...@gmail.com> wrote:

> Michael,

>

> Your code works but this is not exactly what I need.

> Using your method I get something like this :

```

>
> a=1.5
> b=5.45
> N=20
> elev=ALOG10(FINDGEN(N) * (10.^b - 10.^a) / (N - 1.) + 10.^a)
> PLOT, elev, REPLICATE(1,N), YR=[0,2], XR=[a,b], /XLOG, /XS, /YS,
> PSYM=7
>
> And I would like to have all the points equal-spaced on the plot. Do
> you think this is possible ?
> Thank you for your help,
>
> nata

```

Hi Nata,

As long as A and B are > 0, you can use this:

```

log_limits = alog10([A,B])
log_binsize = (log_limits[1]-log_limits[0])/(N-1.0)
log_values = findgen(N)*log_binsize + log_limits[0]

```

```

values = 10.0d^log_values

```

HTH,
Manodeep

Subject: Re: how to create a LOG array from A to B
 Posted by [Mark Piper](#) on Fri, 13 Jan 2012 21:32:04 GMT
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On 1/12/2012 2:43 PM, nata wrote:

```

> I got it !
>
> a=1.5
> b=5.45
> N=20
>
> elev=FINDGEN(N)*(ALOG10(b)-ALOG10(a))/(N-1)+ALOG10(a)
> elev=10.^elev
>
> PLOT, elev, REPLICATE(1,N), YR=[0,2], XR=[a,b], /XLOG, /XS, /YS,
> PSYM=7
>
> nata

```

I know I'm late with this, but several years ago I wrote a routine for

just this purpose. Get it here:

<http://www.exelisvis.com/Default.aspx?tabid=1540&id=1231>

Example:

```
IDL> a = findgen_alog10(5.4, 56.8, 10)
```

```
IDL> print, a
```

```
    5.40000    7.01365    9.10950   11.8316   15.3672
19.9593   25.9237   33.6703
    43.7318   56.8000
```

```
IDL> plot, a, a, /xlog, /ylog, psym=5
```

mp
