

# What is the process for finding the antilog of values in R?

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## RECOMMENDED CITATION

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The process for finding the antilog of values in R involves using the "exp" function. This function takes the natural log of a number and returns its antilog. To find the antilog of a specific value, the user must first determine the natural log of that value. This can be done by using the "log" function and specifying the base as "exp(1)". Once the natural log is obtained, the "exp" function can be used to find the antilog. The resulting value will be the original number before it was transformed by taking the natural log. This process can be repeated for multiple values in R.

## Find the Antilog of Values in R

**The antilog of a number is the inverse of the log of a number.**

**So, if you calculate the log of a number you can then use the antilog to get back the original number.**

**For example, suppose we start with the number 7. If we take the log (base 10) of 7 then we would get .845:**

$$\log_{10}(7) = .845$$

**The antilog (base 10) of the value 0.845 can be found by taking 10 raised to the power of 0.845:**

$$10^{.845} = 7$$

**The antilog allowed us to get back the original number.**

**The following table shows how to calculate the antilog of values in R according to their base:**

Base	Number	Log	Antilog
n	x	$\log(x, n)$	$x^n$
e	x	$\log(x)$	$\exp(x)$
10	x	$\log_{10}(x)$	$10^x$

The following examples show how to calculate the antilog of values in R using different values for the base.

Example 1: Calculating the Antilog of Base 10

Suppose we take the log (base 10) of the value 7:

```
#define original value
```

```
original = 7
```

```
#take log (base 10) of original value
```

```
log_original = log10(original)
```

```
#display log (base 10) of original value
```

```
log_original
```

```
0.845098
```

In order to get back the original value of 7, we can take the antilog by raising 10 to the power of 0.845098:

```
#take the antilog
```

```
10^log_original
```

```
7
```

**By taking the antilog, we were able to obtain the original value of 7.**

**Example 2: Calculating the Antilog of a Natural Log**

```
#define original value
```

```
original = 7
```

```
#take natural log of original value
```

```
log_original = log(original)
```

```
#display natural log of original value
```

```
log_original
```

```
1.94591
```

**In order to get back the original value of 7, we can take the antilog by raising e to the power of 1.94591:**

```
#take the antilog
```

```
exp(log_original)
```

7

**By taking the antilog, we were able to obtain the original value of 7.**

**Example 3: Calculating the Antilog of Base x**

**Suppose we take the log (base 5) of the value 7:**

```
#define original value
```

```
original = 7
```

```
#take log (base 5) of original value
```

```
log_original = log(original, 5)
```

```
#display log (base 10) of original value
```

```
log_original
```

```
1.209062
```

**In order to get back the original value of 7, we can take the antilog by raising 5 to the power of 1.209062:**

```
#take the antilog
```

```
5^log_original
```

**7**

**By taking the antilog, we were able to obtain the original value of 7.**

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