Natural Log ^.0 0 0 Logarithm

The natural logarithm (^.) is inverse to the exponential ^ (i.e., y=^.^y and y=^^.y).	The base-x logarithm x^.y is the inverse of power (^) in the sense that y = x^.x^y and y = x^x^.y.

Certain properties of logarithms are illustrated below:

```
   x=: 4 [ y=: 0 1 2 3
   (x^y);(x^.x^y);(x^.y);(x^x^.y)
+---------+-------+-----------------+--------+
|1 4 16 64|0 1 2 3|__ 0 0.5 0.792481|_. 1 2 3|
+---------+-------+-----------------+--------+

   logtable=: ^./~@i.
   <6j2 ": logtable 6
+-----------------------------------+
|    _.  0.00  0.00  0.00  0.00  0.00|
|    __  0.00     _     _     _     _|
|    __  0.00  1.00  1.58  2.00  2.32|
|    __  0.00  0.63  1.00  1.26  1.46|
|    __  0.00  0.50  0.79  1.00  1.16|
|    __  0.00  0.43  0.68  0.86  1.00|
+-----------------------------------+
```

The first derivative of the natural logarithm is the reciprocal. For example:

```
   ^. d. 1 y=: 0 1 2 3 4 5 6
_ 1 0.5 0.333333 0.25 0.2 0.166667

   % ^. d. 1 y
0 1 2 3 4 5 6
```