

Reciprocal % 0 0 0 Divided by

<p>% y is the reciprocal of y, that is, 1%y. For example, %4 ↔ 0.25.</p>	<p>x % y is division of x by y as defined in elementary math, except that 0%0 is 0. See McDonnell [11], and the resulting pattern in the middle column and middle row of the table below.</p>
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We will illustrate the divide function by tables, using a function to generate lists symmetric about zero:

```

sym=: i.@>:@+:- ]          Symmetric integers
] a=: sym 3
_3 _2 _1 0 1 2 3

(] ; *) |. a%/a
+-----+-----+
|      _1  _1.5  _3  _  3  1.5      1 |  _1  _1  _1  1  1  1  1 |
|_0.666667  _1  _2  _  2  1  0.666667 |  _1  _1  _1  1  1  1  1 |
|_0.333333  _0.5  _1  _  1  0.5  0.333333 |  _1  _1  _1  1  1  1  1 |
|      0      0  0  0  0  0      0 |  0  0  0  0  0  0  0 |
| 0.333333  0.5  1  _  _1  _0.5  _0.333333 |  1  1  1  _1  _1  _1  _1 |
| 0.666667  1  2  _  _2  _1  _0.666667 |  1  1  1  _1  _1  _1  _1 |
|      1  1.5  3  _  _3  _1.5      _1 |  1  1  1  _1  _1  _1  _1 |
+-----+-----+

6j2 ": |. a %/ a
_1.00 _1.50 _3.00      _  3.00  1.50  1.00
_0.67 _1.00 _2.00      _  2.00  1.00  0.67
_0.33 _0.50 _1.00      _  1.00  0.50  0.33
 0.00  0.00  0.00  0.00  0.00  0.00  0.00
 0.33  0.50  1.00      _  _1.00  _0.50  _0.33
 0.67  1.00  2.00      _  _2.00  _1.00  _0.67
 1.00  1.50  3.00      _  _3.00  _1.50  _1.00

```

The final use of the format function gives a more readable result, with a width of six spaces per column and a uniform two digits after the decimal point.

```

|. a %/ x: a
_1  _3r2  _3  _  3  3r2  1
_2r3  _1  _2  _  2  1  2r3
_1r3  _1r2  _1  _  1  1r2  1r3
 0      0  0  0  0  0  0
 1r3  1r2  1  _  _1  _1r2  _1r3
 2r3  1  2  _  _2  _1  _2r3
 1  3r2  3  _  _3  _3r2  _1

```