

Oblique m/ . u/ . _ _ _ Key

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| <p>u/.y applies u to each of the oblique lines of a table y. For example:</p> <pre> i.3 4 0 1 2 3 4 5 6 7 8 9 10 11 </. i.3 4 +-----+ 0 1 4 2 5 8 3 6 9 7 10 11 +-----+</pre> <p>In general, u/.y is the result of applying u to the oblique lines of _2-cells of y. If the rank of y is less than two, y is treated as the table ,.y.</p> <p>m/.y applies successive verbs from the gerund m to the oblique lines of _2-cells of y, extending m cyclically as required.</p> <p>Thus:</p> <pre> <`(<@ .) /. i.3 4 +-----+ 0 4 1 2 5 8 9 6 3 7 10 11 +-----+</pre> | <p>x u/.y ↔ (=x) u@# y, that is, items of x specify keys for corresponding items of y and u is applied to each collection of y having identical keys. For example:</p> <pre> 1 2 3 1 3 2 1 </. 'abcdefg' +-----+ adg bf ce +-----+</pre> <p>x m/.y applies successive verbs from the gerund m to the collections of y, extending m cyclically as required.</p> |
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Continued

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The application of a function to diagonals of a table is commonly useful, as in correlation, in convolution, and in products of polynomial coefficients (or, equivalently, products of numbers in a fixed base). For example:

```
t=: p */ q [ p=: 1 2 1 [ q=: 1 3 3 1
t ; (+//.t) ; 1 1 &(+//.@(*)) ^: (i.6) 1
```

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|---------------------|---|---|---|---|---|----|----|---|---|---|---|----|----|---|---|
| +-----+-----+-----+ | | | | | | | | | | | | | | | |
| 1 | 3 | 3 | 1 | 1 | 5 | 10 | 10 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 6 | 6 | 2 | | | | | | | 1 | 1 | 0 | 0 | 0 | 0 |
| 1 | 3 | 3 | 1 | | | | | | | 1 | 2 | 1 | 0 | 0 | 0 |
| | | | | | | | | | | 1 | 3 | 3 | 1 | 0 | 0 |
| | | | | | | | | | | 1 | 4 | 6 | 4 | 1 | 0 |
| | | | | | | | | | | 1 | 5 | 10 | 10 | 5 | 1 |
| +-----+-----+-----+ | | | | | | | | | | | | | | | |

```
((10#.p)*10#.q), 10 #. +//. p */ q
161051 161051
```

Unlike polynomial coefficients, the diagonal sums of a multiplication table of digits should be “normalized” if any equal or exceed the radix.