

# Boolean $m\ b.\ \_0\ 0$

If  $f$  is a dyadic boolean function and  $d=: 0\ 1$ , then  $d\ f/\ d$  (or  $f/\sim d$ ) is its complete table. For example the tables for or, nor, and, and not-and (followed by their ravels) appear as follows:

```
(+./~ ; +:/~ ; *./~ ; */~) d=: 0 1
+-----+
|0 1|1 0|0 0|1 1|
|1 1|0 0|0 1|1 0|
+-----+
```

```
,&.> (+./~ ; +:/~ ; *./~ ; */~) d
+-----+
|0 1 1 1|1 0 0 0|0 0 0 1|1 1 1 0|
+-----+
```

If ordered by their ravels, each of the sixteen possible boolean dyads can be characterized by its index  $k$ ; the phrase  $k\ b.$  produces the corresponding function. Moreover, negative indexing may be used. For example:

```
(7 b./~;8 b./~;1 b./~;14 b./~;_2 b./~) d
+-----+
|0 1|1 0|0 0|1 1|1 1|
|1 1|0 0|0 1|1 0|1 0|
+-----+
```

The adverb  $b.$  also applies to array arguments. For example:

```
(<"2) 2 0 1 | : 7 8 1 15 b./~ d
+-----+
|0 1|1 0|0 0|1 1|
|1 1|0 0|0 1|1 1|
+-----+
```

The monad (as in  $m\ b.\ y$ ) is equivalent to a zero left argument (as in  $0\ m\ b.\ y$ ).

## Basic Characteristics $u \ b. \ _$

$u \ b. \ y$  gives the obverse of  $u$  if  $y$  is  $\_1$ ; its ranks if  $y$  is  $0$ ; and its identity function if  $y$  is  $1$ .

For example:

```
^ b. _1
^.
```

```
^ b. 0
0 0 0
```

```
^ b. 1
$&1@({.@$)
```

```
g=: +&2@(*&3@*:)
|y=: g 5
77
```

```
g ^:_1 y
5
```

```
g b. _1
%:@(%&3)@(-&2)
```

```
%:@(%&3)@(-&2) y
5
```

```
g b. 0
0 0 0
```