Item Amend m} _ _ _ Amend

If m is numeric and z=: m} y, then $z equals $m, which equals the shape of an item of y. The atom j{z is j{(j{m){y . For example:

```
   y=: a.{~(a.i.'A')+i.4 5
   m=: 3 1 0 2 1
   y ; m ; m}y
+-----+---------+-----+
|ABCDE|3 1 0 2 1|PGCNJ|
|FGHIJ|         |     |
|KLMNO|         |     |
|PQRST|         |     |
+-----+---------+-----+
```

If m is not a gerund, x m} y is formed by replacing by x those parts of y selected by m&{ . Thus:

```
   y; '%*'(1 3;2 _1)} y
+-----+-----+
|ABCDE|ABCDE|
|FGHIJ|FGH%J|
|KLMNO|KLMN*|
|PQRST|PQRST|
+-----+-----+
```

$x must be a suffix of $m{y, and x has the same effect as ($m{y)$,x. Thus:

```
   y; 'think' 1 2} y
+-----+-----+
|ABCDE|ABCDE|
|FGHIJ|think|
|KLMNO|think|
|PQRST|PQRST|
+-----+-----+
```

If m is a gerund, one of its elements determines the index argument to the adverb } , and the others modify the arguments x and y:

```
x (v0`v1`v2)} y          ↔ (x v0 y) (x v1 y)} (x v2 y)
(v0`v1`v2)} y            ↔ (v1 y)} (v2 y)
(   v1`v2)} y            ↔ (v1 y)} (v2 y)
```

For example, the following functions E1, E2, and E3 interchange two rows of a matrix, multiply a row by a constant, and add a multiple of one row to another:

```
   E1=: <@] C. [  [.  E2=: f`g`[}  [.  E3=: F`g`[}
   f=: {:@] * {.@] { [
   F=: [: +/ (1:,{:@]) * (}:@] { []
   g=: {.@]
   M=: i. 4 5
   M;(M E1 1 3);(M E2 1 10);(M E3 1 3 10)
+-------------+-------------+-------------+------------------+
| 0  1  2  3  4| 0  1  2  3  4| 0  1  2  3  4|  0   1   2   3   4|
| 5  6  7  8  9|15 16 17 18 19|50 60 70 80 90|155 166 177 188 199|
|10 11 12 13 14|10 11 12 13 14|10 11 12 13 14| 10  11  12  13  14|
|15 16 17 18 19| 5  6  7  8  9|15 16 17 18 19| 15  16  17  18  19|
+-------------+-------------+-------------+------------------+
```

Item Amend u} _ _ _ Amend

u} is defined in terms of the noun case m}, the verb u applying to the argument or arguments to provide the numeric indices required by it.

For example:

```
   x=: 100 + i. 2 4
   u=: */@$@] | (5: * i.@$@[)
   y=: i. 3 2 4
   x ; y ; (x u y) ; (x u} y)
+---------------+-----------+----------+---------------+
|100 101 102 103| 0  1  2  3| 0 5 10 15|100 105   2   3|
|104 105 106 107| 4  5  6  7|20 1  6 11|  4 101 106   7|
|               |           |          |               |
|               | 8  9 10 11|          |  8   9 102 107|
|               |12 13 14 15|          | 12  13  14 103|
|               |           |          |               |
|               |16 17 18 19|          | 16  17  18  19|
|               |20 21 22 23|          |104  21  22  23|
+---------------+-----------+----------+---------------+
```

The positions selected by x u} y may be made to depend on either or both of the arguments x and y, and related adverbs can be defined for convenient use in common cases. For example:

```
   A=: @(i.@$@])
   u=: (<0 1)&|:
   x=: 'DIAG' [ y=: a. {~ (a. i. 'a') + i. 4 5
   x;y;(x u A y);(x u A} y)
+----+-----+---------+-----+
|DIAG|abcde|0 6 12 18|Dbcde|
|    |fghij|         |fIhij|
|    |klmno|         |klAno|
|    |pqrst|         |pqrGt|
+----+-----+---------+-----+
```

Also see the case m} for the use of gerunds.