# rows() — Number of rows and number of columns

## Description

`rows(P)` returns the number of rows of `P`.
`cols(P)` returns the number of columns of `P`.
`length(P)` returns `rows(P)*cols(P)`.

## Syntax

```
real scalar  rows(transmorphic matrix P)
real scalar  cols(transmorphic matrix P)
real scalar  length(transmorphic matrix P)
```

## Remarks and examples

`length(P)` is typically used with vectors, as in
```
for (i=1; i<=length(x); i++) {
    ... x[i] ...
}
```

## Conformability

`rows(P), cols(P), length(P):`
```
P:     r × c
result:  1 × 1
```

## Diagnostics

`rows(P), cols(P), and length(P)` return a result that is greater than or equal to zero.

## Also see

[M-4] Utility — Matrix utility functions