

## Description

The conditional operator returns  $b$  if  $a$  is true ( $a$  is not equal to 0) and  $c$  otherwise.

## Syntax

$$a ? b : c$$

where  $a$  must evaluate to a real scalar, and  $b$  and  $c$  may be of any type whatsoever.

## Remarks and examples

Conditional operators

$$\text{dof} = (k==0 ? n-1 : n-k)$$

are more compact than the `if-else` alternative

```
if (k==0) dof = n-1
else     dof = n-k
```

and they can be used as parts of expressions:

$$\text{mse} = \text{ess}/(k==0 ? n-1 : n-k)$$

## Conformability

$a ? b : c$ :

$a$ :	$1 \times 1$
$b$ :	$r_1 \times c_1$
$c$ :	$r_2 \times c_2$
<i>result</i> :	$r_1 \times c_1$ or $r_2 \times c_2$

## Diagnostics

In  $a ? b : c$ , only the necessary parts are evaluated:  $a$  and  $b$  if  $a$  is true, or  $a$  and  $c$  if  $a$  is false. However, the `++` and `--` operators are always evaluated:

$$(k==0 ? i++ : j++)$$

increments both  $i$  and  $j$ , regardless of the value of  $k$ .

## Also see

[M-2] [exp](#) — Expressions

[M-2] [Intro](#) — Language definition

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