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ISO 31-11:1992

Australian Standard™

Quantities and units

Part 11: Mathematical signs and symbols for use in the physical sciences and technology

Standards Australia

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Part 11: Mathematical signs and symbols for use in the physical sciences and technology

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PREFACE

This Standard was prepared by the Standards Australia Committee ME-071, *Quantities, Units and Conversions*, to supersede AS 2900.11—1986, *Quantities, units and symbols*, Part 11: *Mathematical signs and symbols for use in the physical sciences and technology.*

This Standard is identical with, and has been reproduced from, ISO 31-11:1992, *Quantities and units,* Part 11*: Mathematical signs and symbols for use in the physical sciences and technology*

The objective of this Standard is to provide users with information about mathematical signs and symbols, their meanings, verbal equivalents and applications.

Users of this Standard are advised by Standards Australia, under arrangements with ISO and IEC, as well as certain other Standards organizations, that the number of this Standard is not reproduced on each page; its identity is shown only on the cover and title pages.

For the purpose of this Standard, the ISO text should be modified as follows:

(a) *Terminology* The words ‘this Australian Standard’ should replace the words ‘this International Standard’ wherever they appear.

(b) *Decimal marker* Substitute a full point for a comma where it appears as a decimal marker.

(c) *References* The reference to the International Standards should be replaced by reference to the following Australian Standard:

Reference to International Standard or other Publication		*Australian Standard*	
ISO		AS	
31	Quantities and units	2900	Quantities and units
31-0	Part 0: General principles	2900.0	Part 0: General principles

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INTRODUCTION

0.1 General

If more than one sign, symbol or expression is given for the same item, they are on an equal footing. Signs, symbols and expressions in the "Remarks" column are given for information.

Where the numbering of an item has been changed in the revision of a part of ISO 31, the number in the preceding edition is shown in parentheses below the new number for the item; a dash is used to indicate that the item in question did not appear in the preceding edition.

0.2 Variables, functions and operators

Variables, such as x, y, etc., and running numbers, such as i in $\Sigma_i\, x_i$, are printed in italic (sloping) type. Also parameters, such as a, b, etc., which may be considered as constant in a particular context, are printed in italic (sloping) type. The same applies to functions in general, e.g. f, g.

An explicitly defined function is, however, printed in Roman (upright) type, e.g. sin, exp, ln, Γ. Mathematical constants, the values of which never change, are printed in Roman (upright) type, e.g. e = 2,718 281 8...; π = 3,141 592 6...; $\mathrm{i}^2 = -1$. Well defined operators are also printed in upright style, e.g. div, δ in δx and each d in $\mathrm{d}f/\mathrm{d}x$.

Numbers expressed in the form of digits are always printed upright, e.g. 351 204; 1,32; 7/8.

The argument of a function is written in parentheses after the symbol for the function, without a space between the symbol for the function and the first parenthesis, e.g. $f(x)$, $\cos(\omega t + \varphi)$. If the symbol for the function consists of two or more letters and the argument contains no operation sign, such as +; −; ×; ·; or /, the parentheses around the argument may be omitted. In these cases, there should be a thin space between the symbol for the function and the argument, e.g. ent 2,4; sin $n\pi$; arcosh $2A$; Ei x.

If there is any risk of confusion, parentheses should always be inserted. For example, write $\cos(x) + y$ or $(\cos x) + y$; do not write $\cos x + y$, which could be mistaken for $\cos(x + y)$.

If an expression or equation must be split into two or more lines, the line-breaks should preferably be immediately after one of the signs =; +; −; ±; or ∓; or, if necessary, immediately after one of the signs ×; ·; or /. In this case, the sign works like a hyphen at the end of the first line, informing the reader that the rest will follow on the next line or even on the next page. The sign should not be repeated at the beginning of the following line; two minus signs could for example give rise to sign errors.