

IEEE Standards Interpretations for IEEE Std 1003.2™-1992 IEEE Standard for Information Technology--Portable Operating System Interfaces (POSIX®)-- Part 2: Shell and Utilities

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Interpretation Request #77

Topic: bc - scale **Relevant Clauses:** 4.3.7.1

POSIX.2 Subclause 4.3 specifies the semantics of the `bc` utility. In subclause 4.3.7.1, lines 1570-1571 state: The scale of an invocation of each of these functions shall be the scale of the value of the scale register when the function is invoked. The functions referred to are the math functions `s()`, `c()`, `a()`, `l()`, `e()` and `j()`. Suppose that `bc` is invoked with the `-l` flag, and that the scale is 20. What is the value of the expression `scale(a(0))`? On the one hand, the sentence quoted above implies that it should be 20. On the other hand, the value of `a(0)` is exactly 0, and the scale of 0 is 0.

Interpretation Response

The specification on lines 1570-1573, page 196 is talking about the scale used while computing the value of the arctangent, not about the computed arctangent, since `arctangent(0)` is zero, `scale(a(0))` is equivalent to `scale(0)` which is zero. The standard clearly states the behaviour for `bc` and `scale()`, and conforming implementations must conform to this.

Rationale for Interpretation

None.