

To: J3
Subject: RRSPACING (UTI 092)
From: Van Snyder

1 Introduction

2 UTI 092 argues that RRSPACING(X) should be an IEEE NaN if X is IEEE Inf. On the other hand, how-
3 ever, RRSPACING(X) can be written as $ABS(FRACTION(X)) * RADIX(X) / EPSILON(X)$. RADIX
4 and EPSILON are inquiry functions, so their result values don't depend upon their argument values,
5 while the result value of FRACTION(X) is defined to be "the same value as X" if X is an IEEE infinity.
6 I would be really surprised if ABS(Inf) or ABS(-Inf) were not Inf, so RRSPACING(\pm Inf) ought to be
7 +Inf.

8 Malcolm argues that the definition of FRACTION is defective: IEEE infinity is not a sensible result for
9 an IEEE infinity argument; the result ought to be NaN. I suppose it's OK to return the same NaN if
10 the argument is NaN. Rather than make RRSPACING consistent with the defective FRACTION, we
11 probably need an interp to correct FRACTION. Or could we just announce an incompatibility in 1.6.3?
12 J3 has decided not to tackle this issue until interp 42 is tackled.

13 2 Edits

14 Edits refer to 07-007. Page and line numbers are displayed in the margin. Absent other instructions, a
15 page and line number or line number range implies all of the indicated text is to be replaced by associated
16 text, while a page and line number followed by + (-) indicates that associated text is to be inserted after
17 (before) the indicated line. Remarks are noted in the margin, or appear between [and] in the text.

18 [Editor: Delete UTI 092.]

420:10+