

Subject: Combined quotient and remainder, sin and cos intrinsics
From: Van Snyder
Reference: 03-258r1, section 2.4.4.4

1 **Number**

2 TBD

3 **Title**

4 Combined quotient and remainder, sin and cos intrinsics.

5 **Submitted By**

6 J3

7 **Status**

8 For consideration.

9 **Basic Functionality**

10 Provide intrinsic subroutines that compute both quotient and remainder, and both sine and cosine.

11 **Rationale**

12 One occasionally needs to compute both cosine and sine, both hyperbolic cosine and sine, or both quotient
13 and remainder. These pairs of functions are related in such a way that it is convenient to compute them
14 together, and more efficient to do so than to invoke existing intrinsic functions or operations to compute
15 them separately.

16 Many processors have such procedures lurking “under the covers” in their run-time libraries, and some
17 exploit them when optimization is requested, but users can’t count on this.

18 It would therefore be useful for the standard to specify intrinsic subroutines that compute both functions
19 in each of these three “companion” pairs, say SINCOS, SINHCOSH and QUOTREM.

20 **Estimated Impact**

21 Minor. A few intrinsics.

22 **Detailed Specification**

23 Provide intrinsic subroutines to compute both sine and cosine, both hyperbolic sine and cosine, and both
24 quotient and remainder.

25 **History**