Reciprocal Iteration Sequence

$R_2 = 2 - R_1 B$

where: B = The original operand that you calculated the reciprocal of.

R_1 = The approximate reciprocal of B that was found in the reciprocal approximation sequence.

R_2 = A correction factor which when multiplied by R_1 will yield a more accurate approximate reciprocal.

example: Using the results of the reciprocal approximation example, find a correction factor and multiply it by the approximate reciprocal to get a more accurate approximation.

$R_2 = 2 - R_1 B$

$B = 2$
$R_1 = .499982$

$R_2 = 2 - (.499982)(2) = 1.000036$

$R_3 = R_1 R_2$

where: R_1 = The approximate reciprocal of the original operand found in the reciprocal approximation sequence.

R_2 = A correction factor found in the iteration process.

R_3 = The new more accurate approximate reciprocal of the original operand.

$R_3 = R_1 R_2$

$R_1 = .499982$
$R_2 = 1.000036$

$R_3 = (.499982)(1.000036) = .5$ (calculator accuracy)

Reciprocal Iteration Instruction Summary

126ijk Enter Si with reciprocal iteration 2 - Sj * Sk

156ijk Enter Vi with reciprocal iteration 2 - Vj * Vk