

## NAG Library Chapter Contents

### C05 – Roots of One or More Transcendental Equations

C05 Chapter Introduction – a description of the Chapter and an overview of the algorithms available

<b>Routine Name</b>	<b>Mark of Introduction</b>	<b>Purpose</b>
C05AUF	23	nagf_roots_contfn_brent_interval Zero of continuous function, Brent algorithm, from a given starting value, binary search for interval
C05AVF	8	nagf_roots_contfn_interval_rcomm Binary search for interval containing zero of continuous function (reverse communication)
C05AWF	23	nagf_roots_contfn_cntin Zero of continuous function, continuation method, from a given starting value
C05AXF	8	nagf_roots_contfn_cntin_rcomm Zero of continuous function, continuation method, from a given starting value (reverse communication)
C05AYF	23	nagf_roots_contfn_brent Zero of continuous function in a given interval, Brent algorithm
C05AZF	7	nagf_roots_contfn_brent_rcomm Zero of continuous function in a given interval, Brent algorithm (reverse communication)
C05BAF	22	nagf_roots_lambertw_real Real values of Lambert's $W$ function, $W(x)$
C05BBF	23	nagf_roots_lambertw_complex Values of Lambert's $W$ function, $W(z)$
C05QBF	23	nagf_roots_sys_func_easy Solution of a system of nonlinear equations using function values only (easy-to-use)
C05QCF	23	nagf_roots_sys_func_expert Solution of a system of nonlinear equations using function values only (comprehensive)
C05QDF	23	nagf_roots_sys_func_rcomm Solution of a system of nonlinear equations using function values only (reverse communication)
C05QSF	23	nagf_roots_sparsys_func_expert Solution of a sparse system of nonlinear equations using function values only (easy-to-use)
C05RBF	23	nagf_roots_sys_deriv_easy Solution of a system of nonlinear equations using first derivatives (easy-to-use)
C05RCF	23	nagf_roots_sys_deriv_expert Solution of a system of nonlinear equations using first derivatives (comprehensive)
C05RDF	23	nagf_roots_sys_deriv_rcomm Solution of a system of nonlinear equations using first derivatives (reverse communication)
C05ZDF	23	nagf_roots_sys_deriv_check Check user's routine for calculating first derivatives of a set of nonlinear functions of several variables