

## NAG Library Chapter Contents

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

#### C05 Chapter Introduction

| <b>Routine Name</b> | <b>Mark of Introduction</b> | <b>Purpose</b>                                                                                        |
|---------------------|-----------------------------|-------------------------------------------------------------------------------------------------------|
| C05ADF              | 8                           | Zero of continuous function in given interval, Brent algorithm                                        |
| C05AGF              | 8                           | Zero of continuous function, Brent algorithm, from given starting value, binary search for interval   |
| C05AJF              | 8                           | Zero of continuous function, continuation method, from a given starting value                         |
| C05AVF              | 8                           | Binary search for interval containing zero of continuous function (reverse communication)             |
| C05AXF              | 8                           | Zero of continuous function by continuation method, from given starting value (reverse communication) |
| C05AZF              | 7                           | Zero in given interval of continuous function by Brent algorithm (reverse communication)              |
| C05BAF              | 22                          | Real values of Lambert's $W$ function, $W(x)$                                                         |
| C05NBF              | 9                           | Solution of system of nonlinear equations using function values only (easy-to-use)                    |
| C05NCF              | 9                           | Solution of system of nonlinear equations using function values only (comprehensive)                  |
| C05NDF              | 14                          | Solution of system of nonlinear equations using function values only (reverse communication)          |
| C05PBA              | 22                          | Solution of system of nonlinear equations using first derivatives (easy-to-use)                       |
| C05PBF              | 9                           | Solution of system of nonlinear equations using first derivatives (easy-to-use)                       |
| C05PCA              | 22                          | Solution of system of nonlinear equations using first derivatives (comprehensive)                     |
| C05PCF              | 9                           | Solution of system of nonlinear equations using first derivatives (comprehensive)                     |
| C05PDA              | 20                          | Solution of system of nonlinear equations using first derivatives (reverse communication)             |
| C05PDF              | 14                          | Solution of system of nonlinear equations using first derivatives (reverse communication)             |
| C05ZAF              | 9                           | Check user's routine for calculating first derivatives                                                |

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