1. Text, letter

   Description automatically generatedDo exercise 6.3 on page 160 of the textbook.

**Answer**

Because A has a non-zero determinant we are certain that we can find a solution to the system. And in fact we see that the residual vector is all zeros (see screenshot below). Because the reciprocal condition estimator yielded a value of 0.17, we know that the matrix is ill-conditioned. This means that a small change in coefficients (the B vector) yields a large change in the solution as well.

Graphical user interface, text, application, email

Description automatically generated

1. Modify your solution to last week’s exercise (poly\_curv\_fit.m) by implementing left division rather than explicitly implementing the least-squares matrix solution.

Graphical user interface, chart, scatter chart

Description automatically generated

1. Do a variation on exercise 7.5 on page 177 of the textbook. Do not implement an indefinite-length series. Instead, implement a fixed-length series that terminates at the seventh-power term. Test it in the range of -3 < x < +3.

A picture containing chart

Description automatically generated

Graphical user interface, text, application

Description automatically generated