Modelling and control summaries

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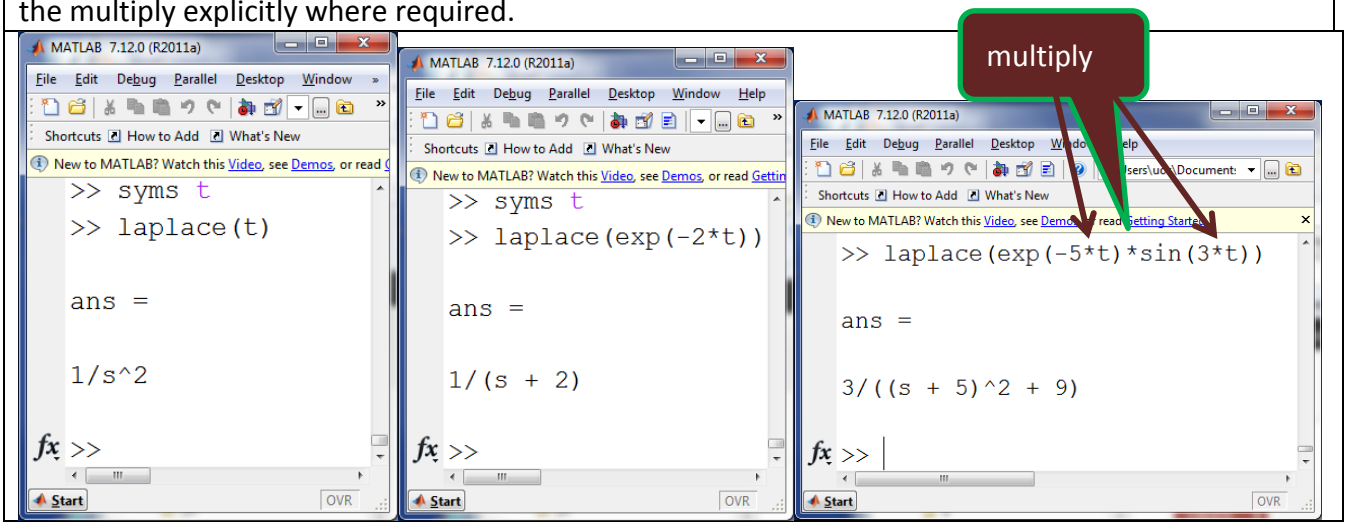
Inverse Laplace 6 – using MATLAB

ANALYTICAL TECHNIQUES FOR SOLVING INVERSE LAPLACE USING MATLAB

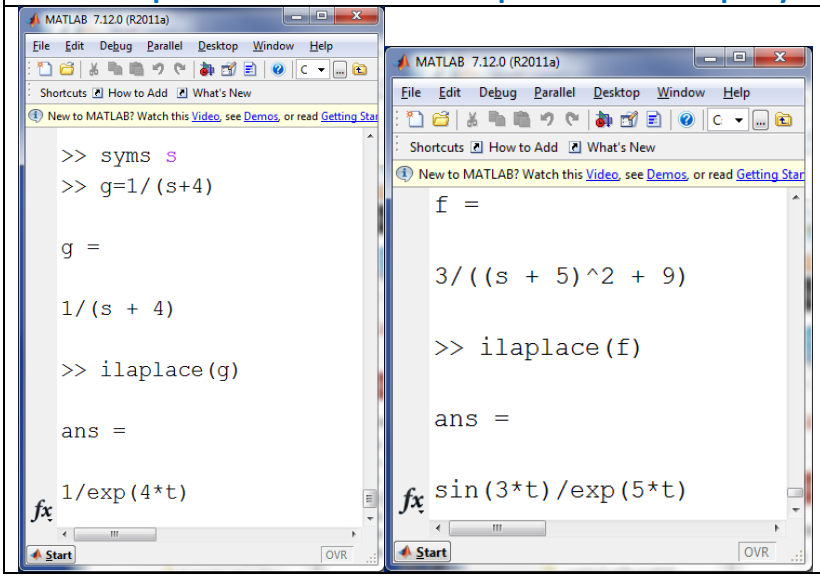
In practice, many problems arise during computer code and we want the solution to be automated; MATLAB can do this for us. MATLAB is also useful for testing our own work and thus getting feedback on our progress. This note looks at the built in files laplace.m and ilaplace.m [part of symbolic toolbox]

Entering a Laplace transform into MATLAB as a symbolic expression

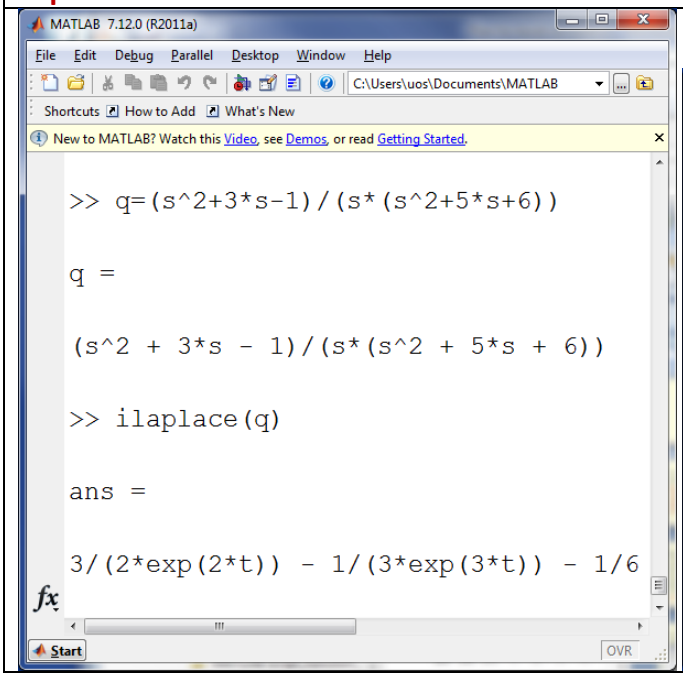
Make sure you have defined 't' as a symbolic variable for time. [In fact you can use any variable but less confusing of you use 't'.] Then simply write your expression as normal but remember to write the multiply explicitly where required.

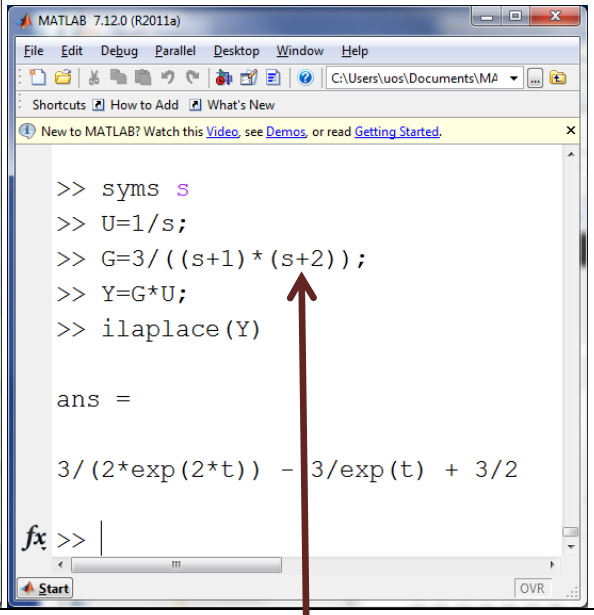


Inverse Laplace uses the function ilaplace.m and is equally easy.



The main caviat is the answer is not always in the format you would most like. Note here how the exponentials are written in the denominator!





Evaluating the result:

As the answer is a symbolic expression, it can be evaluating using subs.m