



SDI Review Form 1.6

PART 1:

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	MS: 2012/BJAST/2358
Title of the Manuscript:	Integration n -th order linear differential equations with variable coefficients with exponential solutions.

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 9 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	The manuscript considers solving the general n-th order linear differential equation with variable coefficients. The problem is extremely interesting and important to the field of differential equations. The author shows that if an algebraic root to the auxiliary equation of the differential equation is known, then the differential equation can be reduced by one order. Two theorems are simple from the mathematical point of view, but they are fundamental and the examples are more interesting. There are other recent basic results on such differential equations. One is about existence of a special solution $y(x)$ such that $y, y', \dots, y^{(n-1)}$ are linearly independent (see <i>Science China Mathematics</i>, 55(2012), 1796-1778) and the other is about the representation of solutions by the matrix exponential (see <i>Advances in Applied Mathematics and Mechanics</i>, 1(2009), 573-580). It is hoped that the author could amend the manuscript by commenting those existing fundamental results to benefit more interested audience. It is recommended publishing a revised version of the manuscript in the journal.	
Minor REVISION comments	On the last but one page: line 5 before "First method", λ_1 should be λ_1. The name of the journal of the reference [6] should be given more clearly. On page 3: Consequence 1 is wrong. One counterexample with $n=2$ is that	



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	$b_1 = \sin(x), b_0 = -\pi^2 - \pi \sin(x),$ with which $\lambda^2 + b_1(x)\lambda + b_0(x) = 0$ has a constant solution $\lambda = \pi$, but for any integer α_1 , $b_0(x) + \alpha_1 b_1(x)$ cannot be a constant.	
<u>Optional/General</u> comments		

Reviewer Details:

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