



# Kingdom of Saudi Arabia

# King Abdulaziz University

Faculty of Science – Mathematics Department  
Second Mid-Term Exam (90 Minutes)

**(204 Math)**

27/6/1435 H – 27/4/2014 A.D.

Second Semester

1434-1435 H

**Model : A**

<b>Name:</b>	<b>Section:</b>
<b>Student's I.N. :</b>	<b>Serial Number:</b>

$Q_1$	$Q_2$	$Q_3$	$Q_4$	$Q_5$	<b>Total Marks (30)</b>

**(Answer the following questions)**

<b>1</b>	<b>Show that the set of the functions <math>e^x, \sin x, 1</math> is linear independent.</b>	<b>[3 Marks]</b>
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<b>2</b>	<b>Determine the form of a particular solution of</b> $y'' - 4y' + 4y = (x + 1)e^{2x}$	<b>[4 Marks]</b>
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3

Solve

$$y'' + 3y' + 2y = 10 \cos x$$

[7 Marks]

<b>4</b>	<b>Solve</b> $Dx + y = t,$ $x - Dy = t$	<b>[8 Marks]</b>
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5	Solve $x^2 y'' + xy' - y = \frac{1}{x^{-1}+1}$	[8 Marks]
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