

Lebanon Evangelical School for Boys and Girls

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Mid Year Exams : February 2011

Please place on this sheet the contents of your course that you will be examining in your Mid Year Exam. Details are expected. Chapter numbers, section headings and the like. A photocopy of what you send back to me will be sent to parents next week.

Teacher : B . Kordahi

Subject : Math (12 E)

Calculus and Statistics

- 1) Chapter 3 : Continuous Functions on an interval (monotone , root of an equation $f(x)=0$, Extension by continuity)
- 2) Chapter 4 : Inverse functions (continuity , monotonosity ,definition and graph)
- 3) Chapter 7 : Natural logarithm (variations , graph , primitive)
- 4) Chapter 8 : Exponential functions (domain , variations , limits , graph , primitives)
- 5) Chapter 20 : First order differential equations (differential equations , solution of a differential equation , equation of the form $y' = f(x)$, separable equations , first order linear equations with constant coefficients)
- 6) Chapter 21 : Linear second order differential equations with constant coefficients (equation of the form $y'' = f(x)$, reduced equation , equation of the type $y'' + \omega^2 y = k$)

Algebra and Geometry

- 5) Chapter 3: Vector product . The triple scalar product (components , applications, areas and volumes , analytic expressions)
- 6) Chapter 4 : Planes and lines (equation of a plane , parametric equations of a line)
- 7) Chapter 5 : Parallelism and orthogonality (relative positions of 2 planes , 2 straight lines , a plane and a straight line , distance from a point to a plane or to a straight line in space)
- 8) Chapter 9 : The modulus and argument of a complex number (modulus , argument , trigonometric form of a complex number)
- 9) Chapter 10 : Exponential form of a complex number (notation , Euler's and De Moivre's formulas , trigonometric applications- linearization)

- 10) Chapter 15 : Complex numbers in geometry (geometric interpretation of $\arg\left(\frac{z-a}{z-b}\right)$

and $\left|\frac{z-a}{z-b}\right|$)

