
ISTANBUL AREL UNIVERSITY

Name, Surname :
Number :
Course Code : MTB301
Course Name : Numerical Analysis I

Exam : Quiz Midterm Final
Date : 19.01.2012

Please make sure to write your name and student number on each paper that you have used

Question Number	1	2	3	Total
Mark				

QUESTIONS

1- Interpolate the data with a Lagrange Polynomia and find P(3.3) value.

x=	0	1	2	3	4
P(x)=	10	4	-8	-14	-2

Hint:
$$P(x) = \sum_k \left(\prod_{j \neq k} \frac{x - x_j}{x_k - x_j} \right) y_k.$$

2- Find x,y,z value using Gramer method.

$$x - 6y + 2z = 5$$

$$2x - 3y + z = 4$$

$$3x + 4y - z = -2$$

3- Let $x^3 - x - 1 = 0$. Let our initial guess for a root be $x_0=1$ and apply the newton-rapson method.

Hint:
$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$