



Mansoura University  
Faculty of Engineering

Midterm Exam.  
Thursday 14/11/2019

Biomedical Engineering Programs



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Numerical Analysis (MTH 201)

Time allowed: 60 min.

Name: \_\_\_\_\_

1. Given the table of readings:

	1	3	5	7	9
	5.78	8.53	10.42	11.96	13.29

(a)[5 pts] Fit these readings for the curve  $y = \sqrt{mx} + c$ , with the computation of the  $L_2$  - norm of the error.

(b)[5 pts] By the use of two different interpolation formulas, find  $y(2)$  and  $y(6.5)$ , respectively.

2. [10 pts] Use Newton-Raphson formula to find the smallest positive root of the equation

$$x^4 - 12x^2 - 10 = 0,$$

correct to four decimal places. Compare the results with those obtained by the bisection method.